	Sheet List Table
Sheet Number	Sheet Title
C0.00	COVERSHEET
L0.00	DEMOLITION PLAN
L0.01	DEMOLITION PLAN
L0.02	DEMOLITION PLAN
L0.03	DEMOLITION PLAN
L0.04	DEMOLITION PLAN
L0.05	DEMOLITION PLAN
L0.06	DEMOLITION PLAN
L0.07	DEMOLITION PLAN
L0.08	DEMOLITION PLAN
L1.00	TREE DISPOSITION
L1.01	TREE DISPOSITION
L1.02	TREE DISPOSITION
L1.03	TREE DISPOSITION
L1.04	TREE DISPOSITION
L1.05	TREE DISPOSITION
L1.06	TREE DISPOSITION
L1.07	TREE DISPOSITION
L1.08	TREE DISPOSITION
L2.00	HARDSCAPE PLAN
L2.01	HARDSCAPE PLAN
L2.02	HARDSCAPE PLAN
L2.03	HARDSCAPE PLAN
L2.04	HARDSCAPE PLAN
L2.05	HARDSCAPE PLAN
L2.06	HARDSCAPE PLAN
L2.07	HARDSCAPE PLAN
L2.08	HARDSCAPE PLAN
L2.10	HARDSCAPE DETAILS
L3.00	LANDSCAPE PLAN
L3.01	LANDSCAPE PLAN
L3.02	LANDSCAPE PLAN
L3.03	LANDSCAPE PLAN
L3.04	LANDSCAPE PLAN
L3.05 L3.06	LANDSCAPE PLAN LANDSCAPE PLAN
L3.00	LANDSCAPE PLAN LANDSCAPE PLAN
L3.07	LANDSCAPE PLAN LANDSCAPE PLAN
L4.00	IRRIGATION PLAN
L4.00	IRRIGATION PLAN
L4.02	IRRIGATION PLAN
L4.03	IRRIGATION PLAN
L4.04	IRRIGATION PLAN
L4.04	IRRIGATION PLAN
L4.06	IRRIGATION PLAN
L4.07	IRRIGATION PLAN
L4.08	IRRIGATION PLAN
L4.10	IRRIGATION DETAILS
L4.11	IRRIGATION NOTES
L4.12	IRRIGATION NOTES



CITY OF FORT LAUDERDALE

PROJECT #12557 NE 4TH AVE STREETSCAPE PROJECT

NE 4TH AVE FROM E SUNRISE BLVD TO NE 13TH ST FORT LAUDERDALE, FLORIDA

DESIGN SPEED: 40 MPH POSTED SPEED: 30 MPH

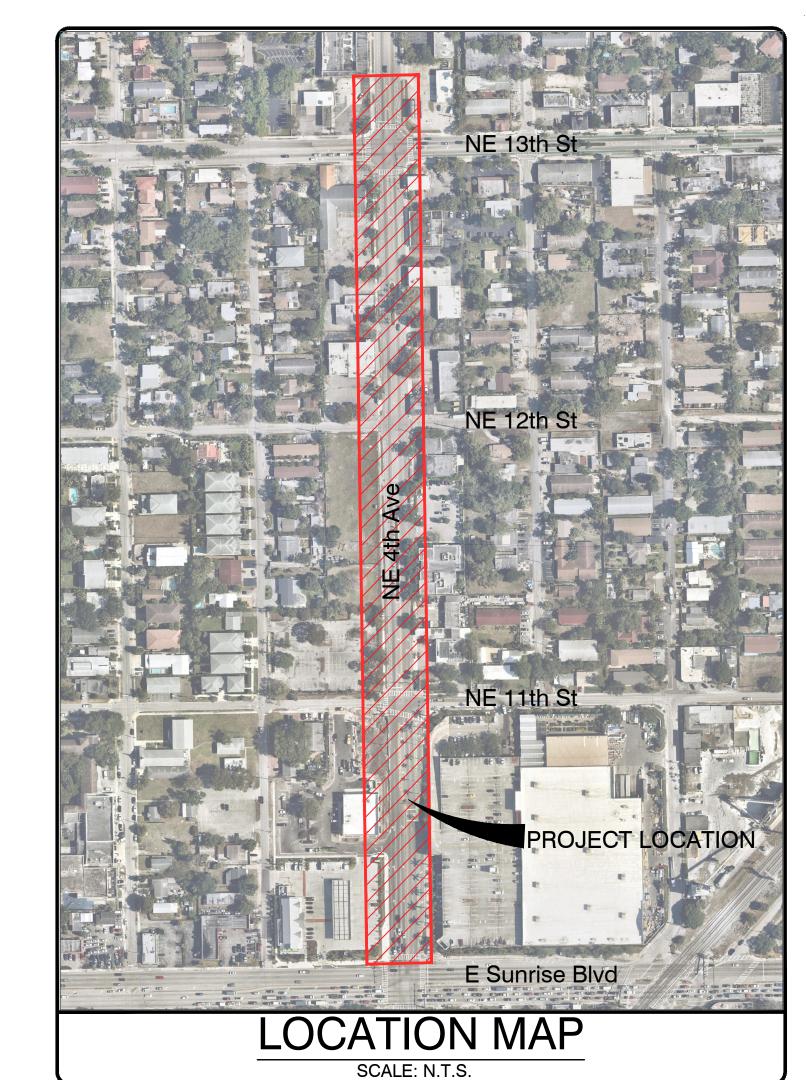
CURRENT EDITIONS OF APPLICABLE STANDARDS AND MANUALS USED:

2016 MANUAL OF UNIFORM MINIMUM STANDARDS FOR DESIGN, CONSTRUCTION AND MAINTENANCE FOR STREETS AND HIGHWAYS (FLORIDA GREENBOOK)

CITY OF FORT LAUDERDALE STANDARDS

REFERENCE STANDARDS: 2021 FDOT DESIGN MANUAL 2021-22 FDOT STANDARD PLANS FOR ROAD AND BRIDGE CONSTRUCTION

2021 FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION



PROJECT #12557 NE 4TH AVE STREETSCAPE PROJECT

NE 4TH AVE FROM E SUNRISE BLVD TO NE 13TH ST



CITY OF FORT LAUDERDALE TRANSPORTATION

MOBILITY

290 NE 3RD AVE, FORT LAUDERDALE, FL 33301

FORT LAUDERDALE CITY COMMISSION

DEAN J. TRANTALIS HEATHER MORAITIS STEVEN GLASSMAN

MAYOR

COMMISSIONER - DISTRICT I COMMISSIONER - DISTRICT II ROBERT McKINZIE COMMISSIONER - DISTRICT III BEN SORENSEN COMMISSIONER - DISTRICT IV

JONATHAN D. HAIGH, P.L.A.

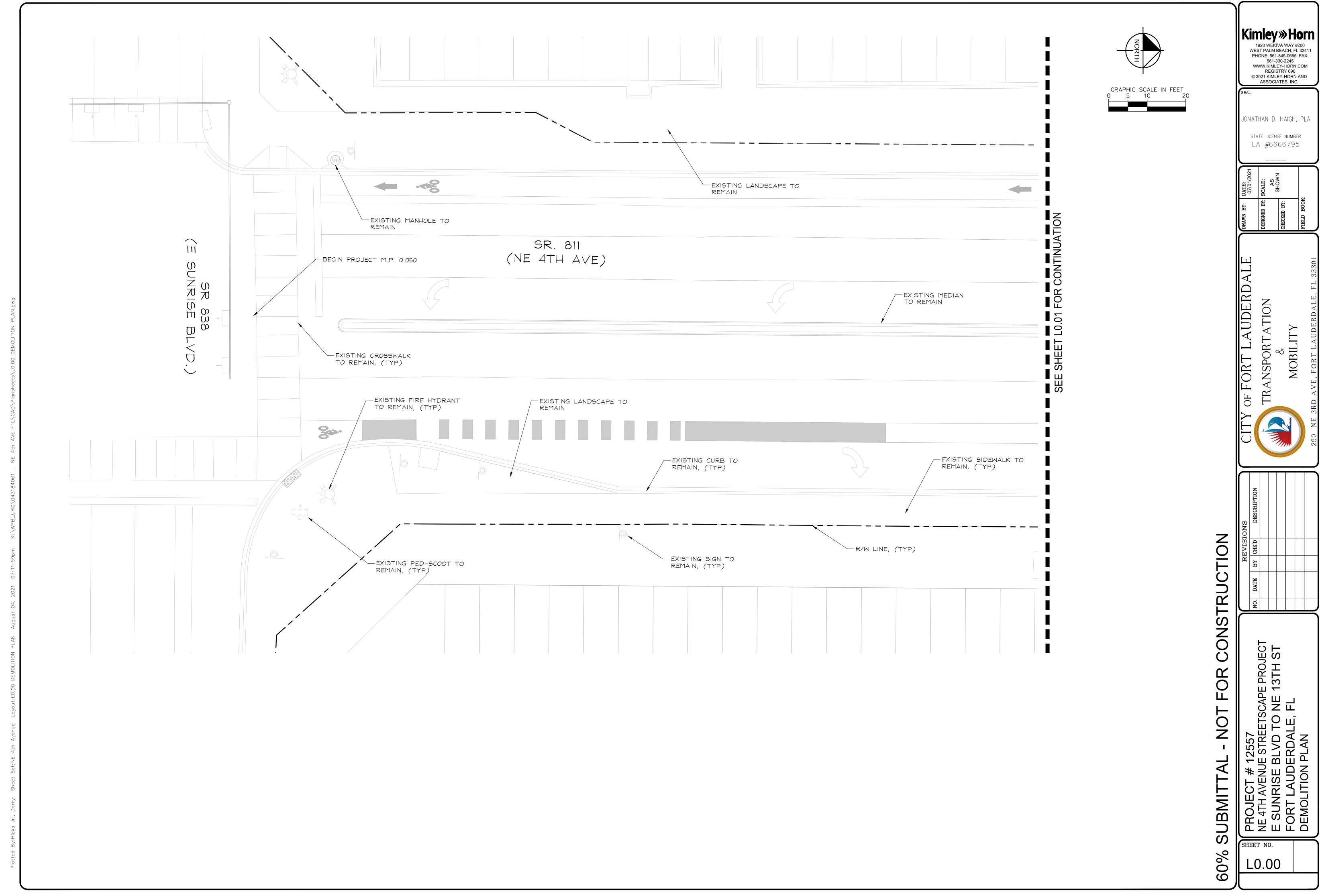
PROJECT MANAGER

561-840-0233

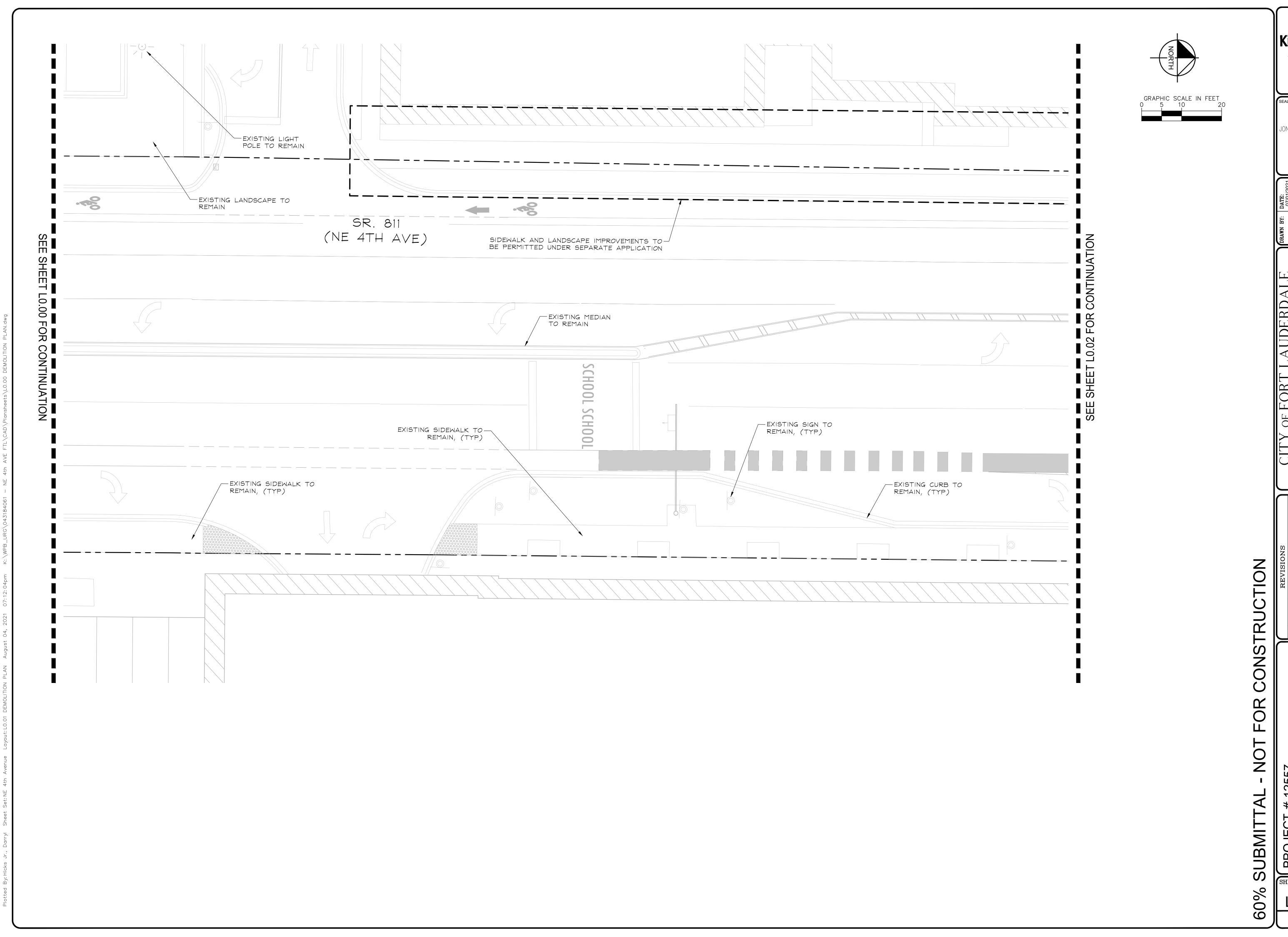
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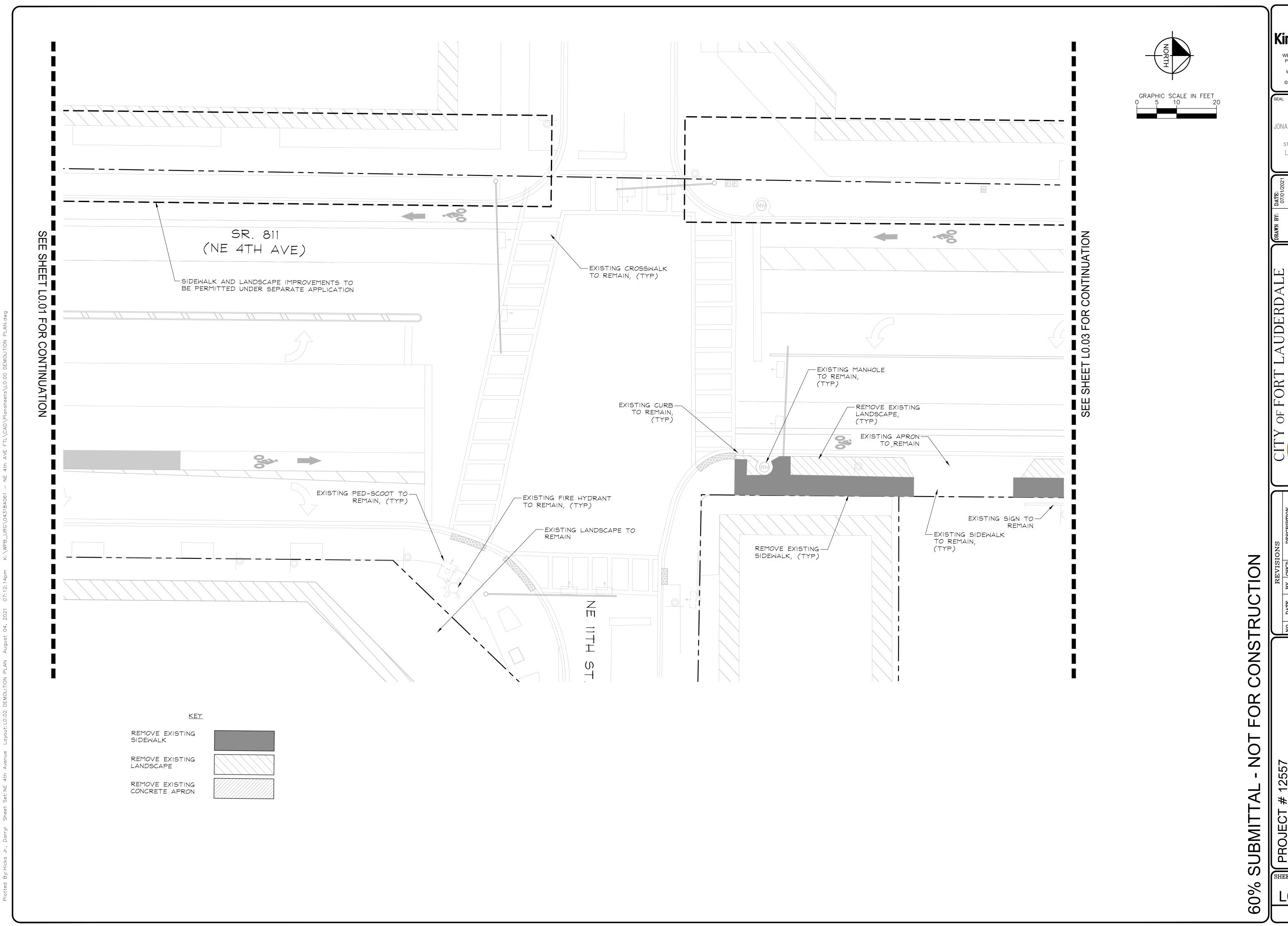
& MOBILIT



JONATHAN D. HAIGH, PLA

STATE LICENSE NUMBER

LA #6666795



Kimley >>> Horn

1920 WEKIVA WAY #200
WEST PALM BEACH, FL 33411
PHONE: 561-845-0665 FAX:
561-330-2245
WWW.KIMLEY-HORN.COM
REGISTRY 696

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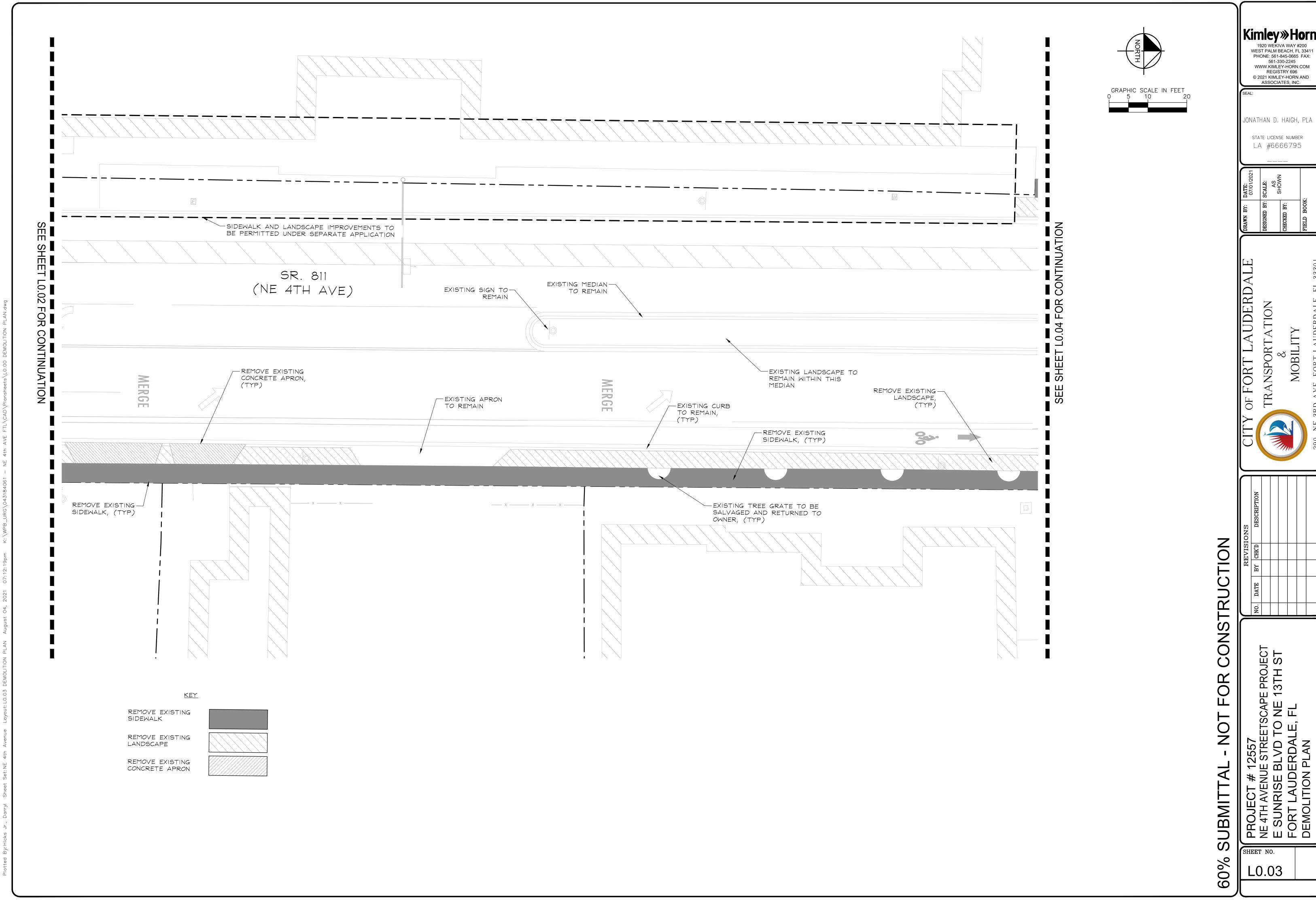
PROJECT # 12557

NE 4TH AVENUE STREETSCAPE PROJECT

E SUNRISE BLVD TO NE 13TH ST

FORT LAUDERDALE, FL

DEMOLITION PLAN



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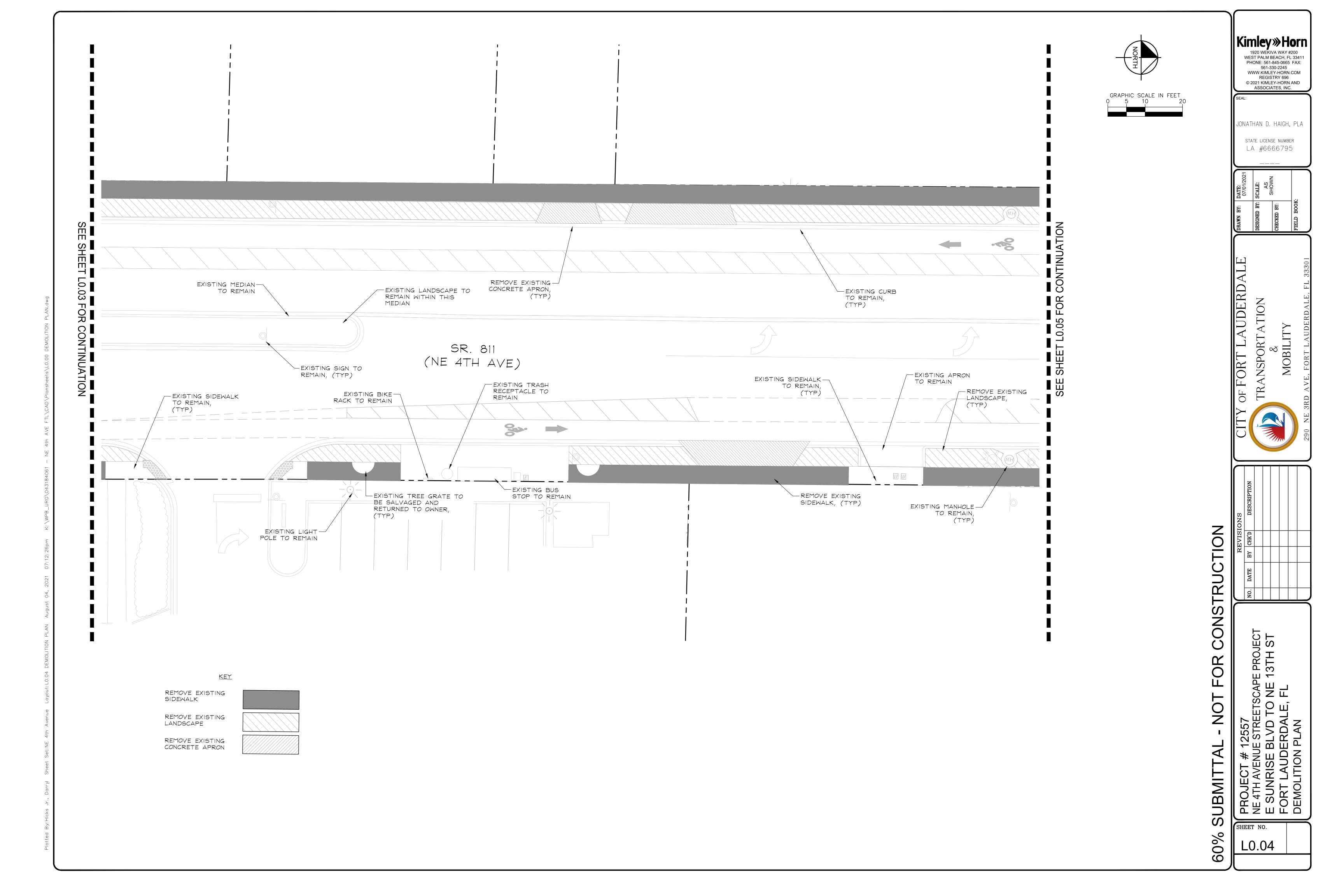
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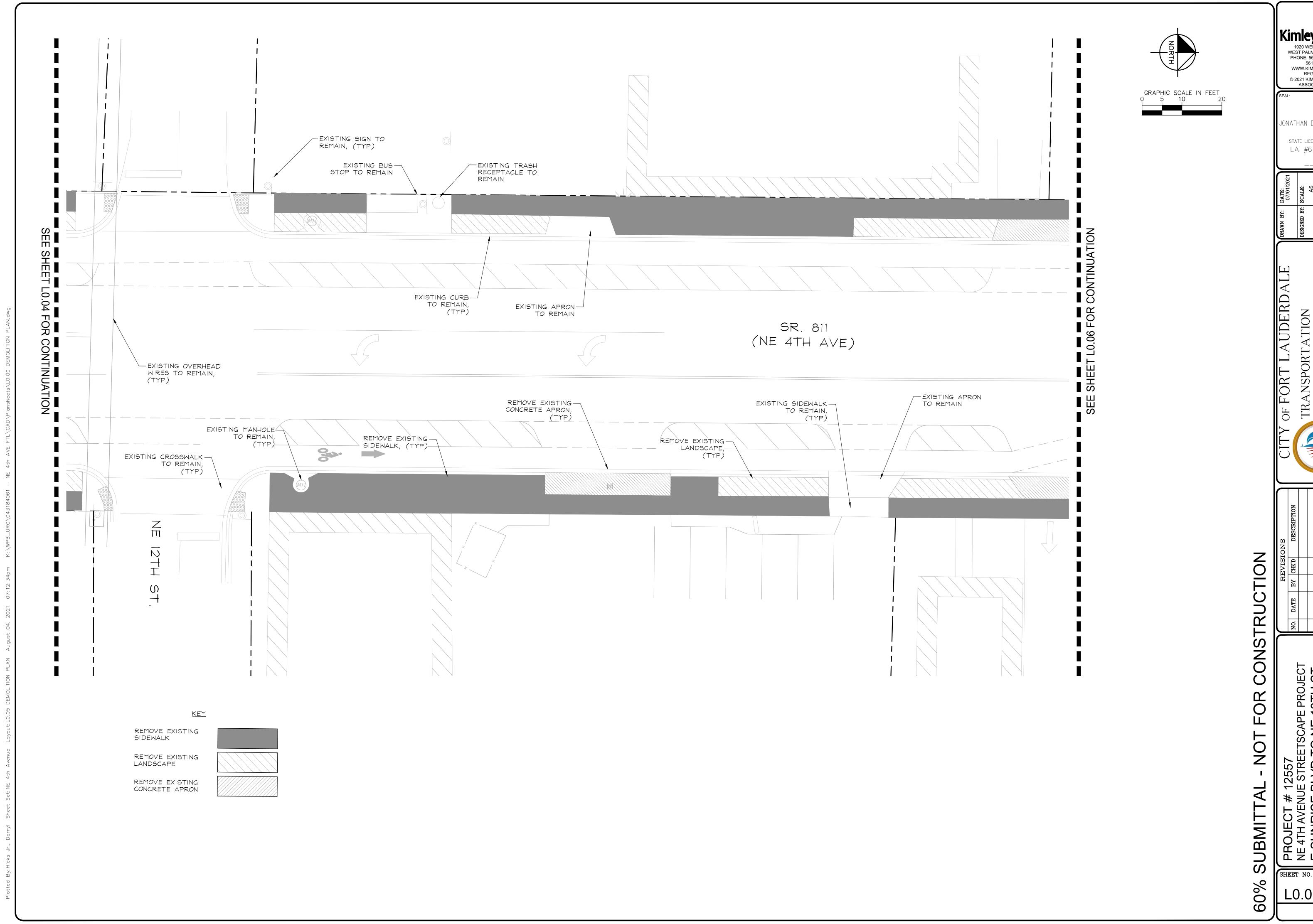
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SHEET NO.

L0.03





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NSPORTATION

PROJECT # 12557

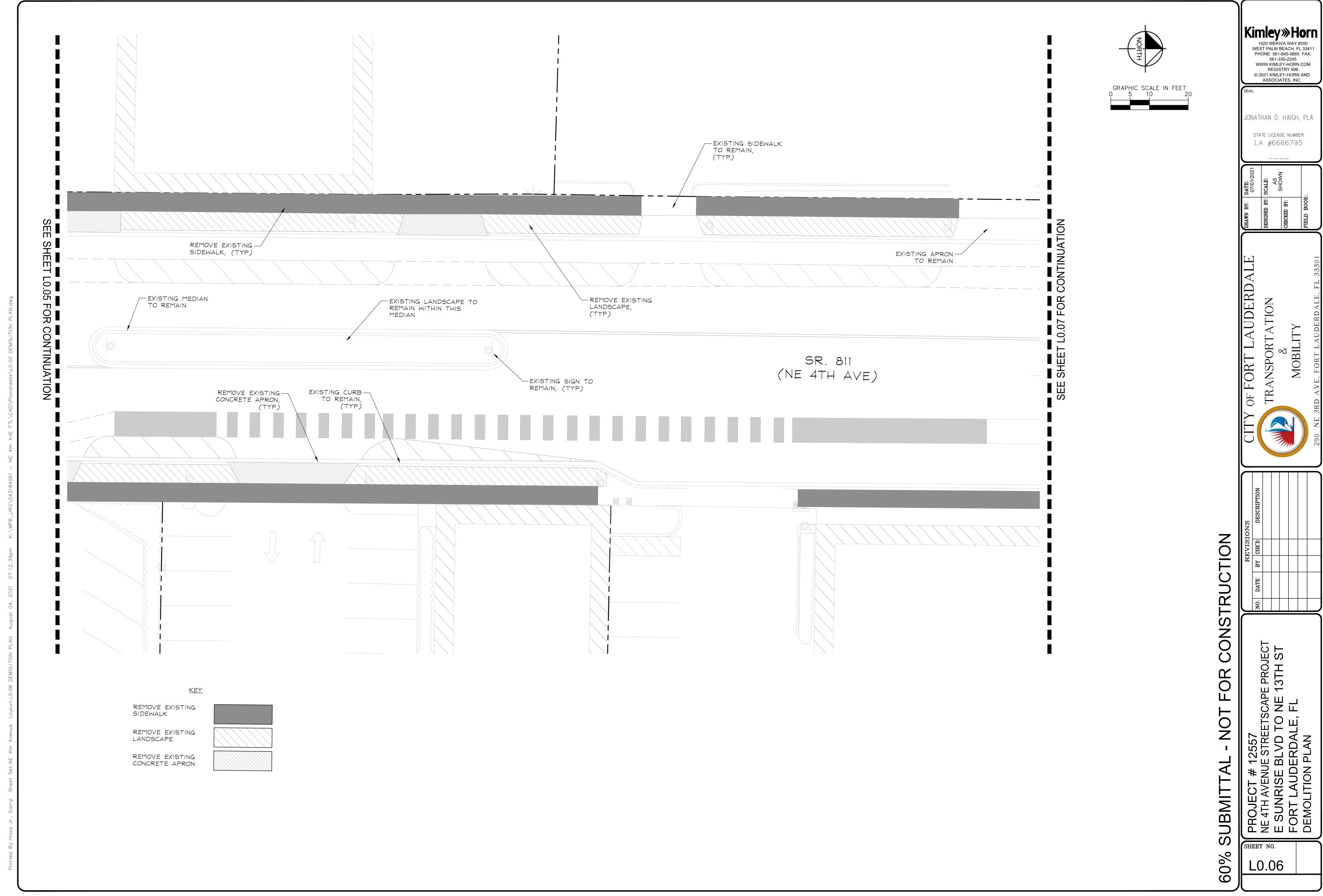
NE 4TH AVENUE STREETSCAPE PROJECT

E SUNRISE BLVD TO NE 13TH ST

FORT LAUDERDALE, FL

DEMOLITION PLAN

L0.05

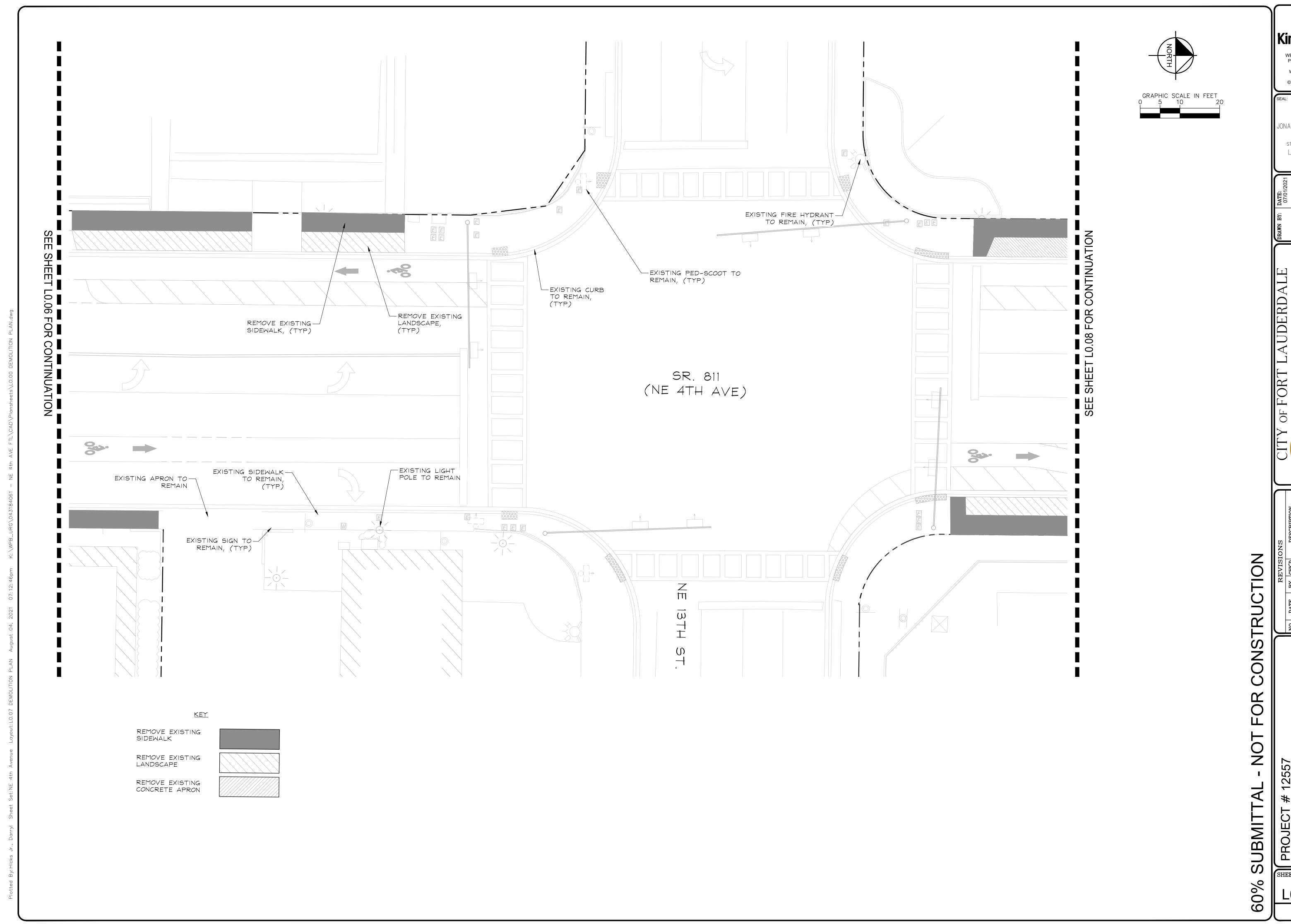


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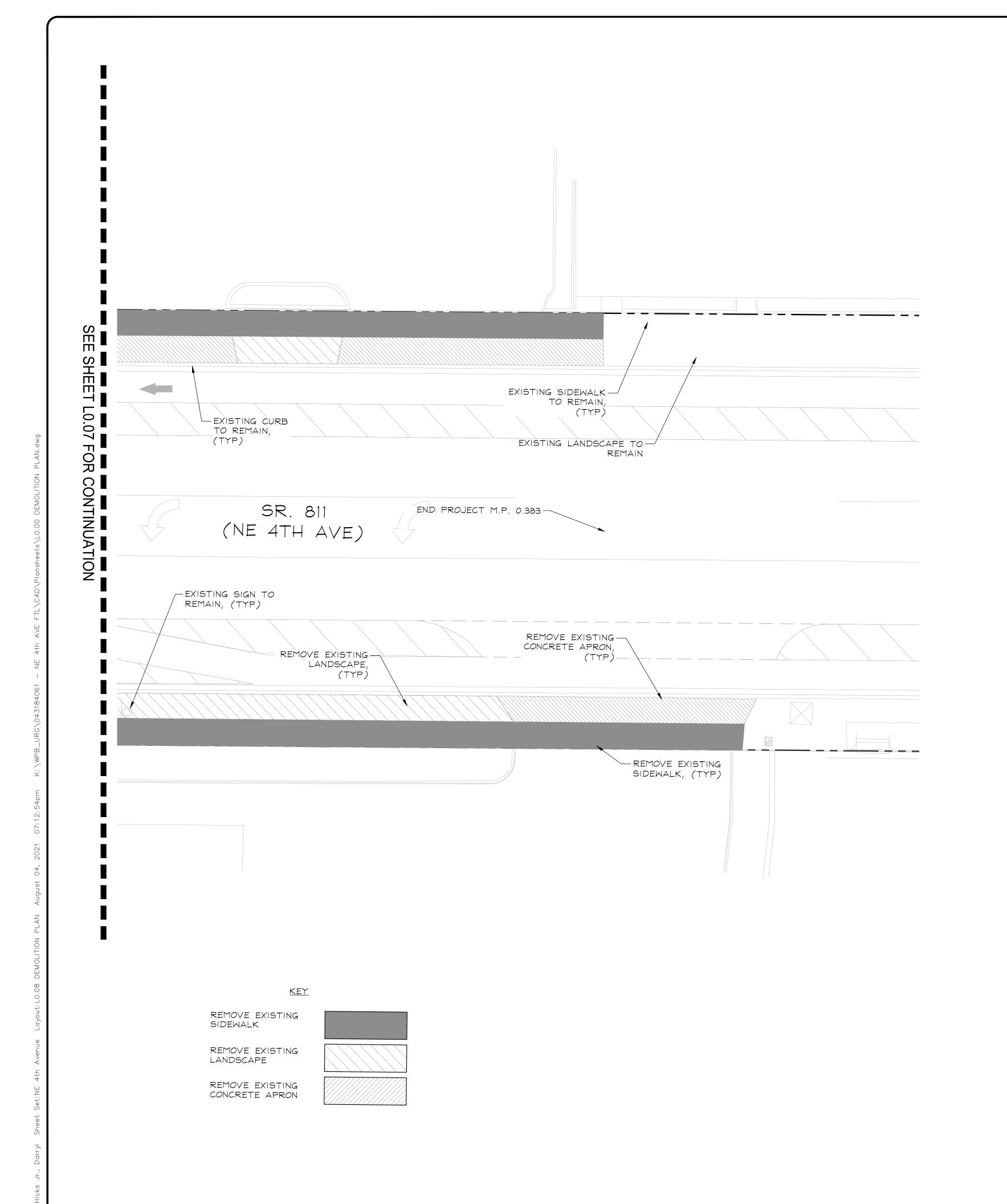
PROJECT # 12557

NE 4TH AVENUE STREETSCAPE PROJECT

E SUNRISE BLVD TO NE 13TH ST

FORT LAUDERDALE, FL

DEMOLITION PLAN



DEMOLITION NOTES

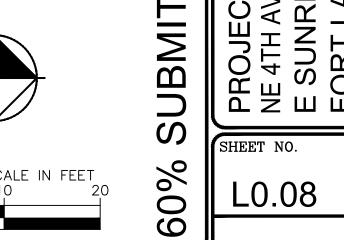
- 1. ANY ITEMS TO REMAIN THAT ARE DAMAGED BY THE CONTRACTOR SHALL BE REPLACED TO THE EXISTING CONDITION OR BETTER AT THE CONTRACTOR'S EXPENSE.
- 2. REFER TO LANDSCAPE PLANS FOR TREE REMOVAL, RELOCATION, AND PROTECTION INFORMATION. ANY AREAS FOR LANDSCAPING SHALL HAVE ALL BASE AND SUBGRADE MATERIAL REMOVED TO A DEPTH
- 3. ALL VALVE BOXES, MANHOLES, CATCH BASINS, AND OTHER ITEMS TO REMAIN SHALL BE ADJUSTED TO
- 4. THE INTENT OF THE DEMOLITION PLAN IS TO DEPICT EXISTING FEATURES THAT ENCUMBER THE PROPOSED CONSTRUCTION AREA AND ARE SCHEDULED FOR REMOVAL. SOME INCIDENTAL ITEMS MAY HAVE BEEN INADVERTENTLY OMITTED FROM THE PLAN. THE CONTRACTOR IS ENCOURAGED TO THOROUGHLY INSPECT THE SITE AS WELL AS REVIEW THE PLANS AND SPECIFICATIONS PRIOR TO SUBMITTING PRICING. CONTRACTOR WILL NOT RECEIVE ADDITIONAL COMPENSATION FOR INCIDENTAL ITEMS NOT SHOWN ON THIS DEMOLITION PLAN.
- 5. THIS DEMOLITION PLAN IS BASED ON AVAILABLE UTILITY INFORMATION AND MAY OR MAY NOT BE ALL INCLUSIVE FOR THIS SITE. ANY UTILITIES ENCOUNTERED DURING DEMOLITION THAT ARE NOT DEPICTED/ADDRESSED ON THIS DRAWING SHOULD BE BROUGHT TO THE ATTENTION OF THE PROJECT ENGINEER IMMEDIATELY.
- 6. CONTRACTOR IS REQUIRED TO OBTAIN ALL DEMOLITION AND DEWATERING PERMITS, IF APPLICABLE.
- 7. ALL FEATURES IDENTIFIED ON THIS PLAN WHICH ARE LISTED TO BE DEMOLISHED ARE TO BE REMOVED
- 8. CONTRACTOR SHALL LIMIT ALL DEMOLITION ACTIVITIES TO THOSE AREAS DELINEATED ON THE CONSTRUCTION DRAWINGS UNLESS OTHERWISE DIRECTED BY THE DEVELOPER OR AS REQUIRED FOR CONSTRUCTION OF IMPROVEMENTS.
- 9. CONTRACTOR IS RESPONSIBLE FOR CONTROLLING AIRBORNE DUST AND POLLUTANTS BY USING WATER SPRINKLING OR OTHER SUITABLE MEANS OF CONTROL.
- 10. CONTRACTOR TO USE CARE IN HANDLING DEBRIS FROM SITE TO ENSURE THE SAFETY OF THE PUBLIC. HAUL ROUTE TO BE CLOSELY MONITORED FOR DEBRIS OR MATERIALS TRACKED ONTO ADJOINING ROADWAYS, SIDEWALKS, ETC. ROADWAYS AND WALKWAYS TO BE CLEARED DAILY OR AS NECESSARY
- 11. ALL ASPHALT TO BE REMOVED SHALL BE SAW CUT ADJACENT TO REMAINING IMPROVEMENTS.
- 12. WHERE REMAINING, INLETS, MANHOLE COVERS, AND VALVE COVERS TO BE PROTECTED IN PAVEMENT REMOVAL AREAS. CONTRACTOR SHALL REPLACE DAMAGED STRUCTURES AT THEIR EXPENSE.
- 13. CONTRACTOR MUST PROTECT THE PUBLIC AT ALL TIMES WITH FENCING, BARRICADES, ENCLOSURES, ETC. AS APPROVED BY THE CITY OF DELRAY BEACH AND CONSTRUCTION MANAGER.
- 14. CONTINUOUS ACCESS SHALL BE MAINTAINED FOR SURROUNDING PROPERTIES AT ALL TIMES DURING DEMOLITION OF EXISTING FACILITIES AND CONSTRUCTION OF NEW FACILITIES. SIGNAGE SHALL BE POSTED TO DIRECT THE PUBLIC TO THE PATH OF TRAVEL.
- 15. ALL MATERIAL REMOVED FROM THIS SITE BY THE CONTRACTOR SHALL BE DISPOSED OF BY THE CONTRACTOR IN A LEGAL MANNER.
- 16. REFER TO THE TOPOGRAPHIC SURVEY FOR ADDITIONAL DETAILS OF EXISTING STRUCTURES, ETC., LOCATED WITHIN THE PROJECT SITE. UNLESS OTHERWISE NOTED, ALL EXISTING BUILDINGS, STRUCTURES, SLABS, CONCRETE, ASPHALT, DEBRIS PILES, SIGNS, AND ALL APPURTENANCES ARE TO BE REMOVED FROM THE SITE BY THE CONTRACTOR AND PROPERLY DISPOSED OF IN A LEGAL MANNER AS PART OF THIS CONTRACT. SOME ITEMS TO BE REMOVED MAY NOT BE DEPICTED ON THE TOPOGRAPHIC SURVEY. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VISIT THE SITE AND DETERMINE THE FULL EXTENT OF ITEMS TO BE REMOVED. IF ANY ITEMS ARE IN QUESTION, THE CONTRACTOR SHALL CONTACT THE OWNER PRIOR TO REMOVAL OF SAID ITEMS.
- 17. ALL TREES NOT SPECIFICALLY SHOWN TO BE PRESERVED OR RELOCATED SHALL BE REMOVED AS A PART OF THIS CONTRACT. TREE PROTECTION FENCING SHALL BE INSTALLED PRIOR TO ANY
- 18. CONTRACTOR MUST COORDINATE THE LIMITS OF UTILITY DEMOLITION WITH PROPOSED PLANS.

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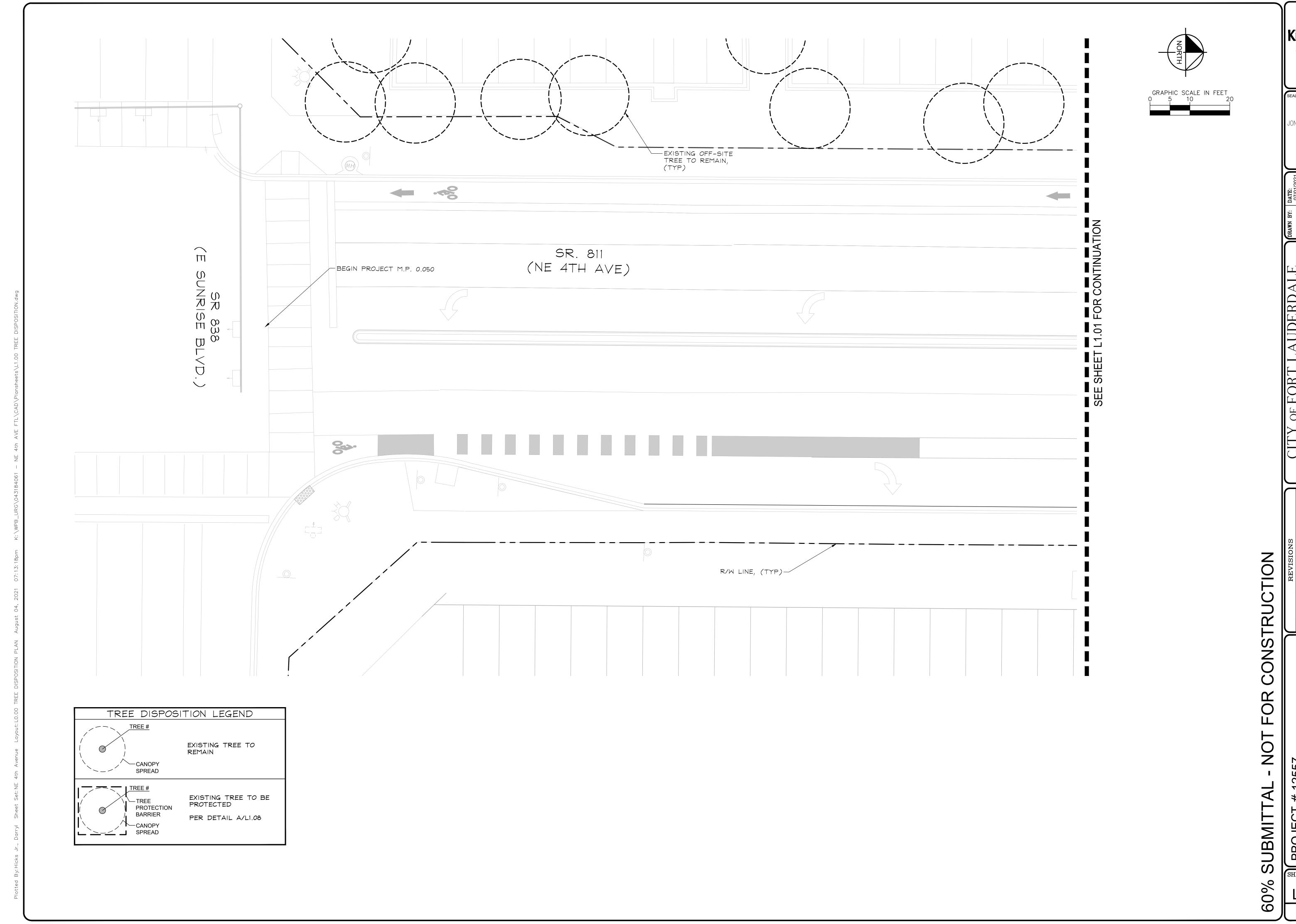
PROJECT # 12 NE 4TH AVENUE 8



CONSTRUCTION

FOR

NOT



JONATHAN D. HAIGH, PLA STATE LICENSE NUMBER

LA #6666795

& MOBILIT

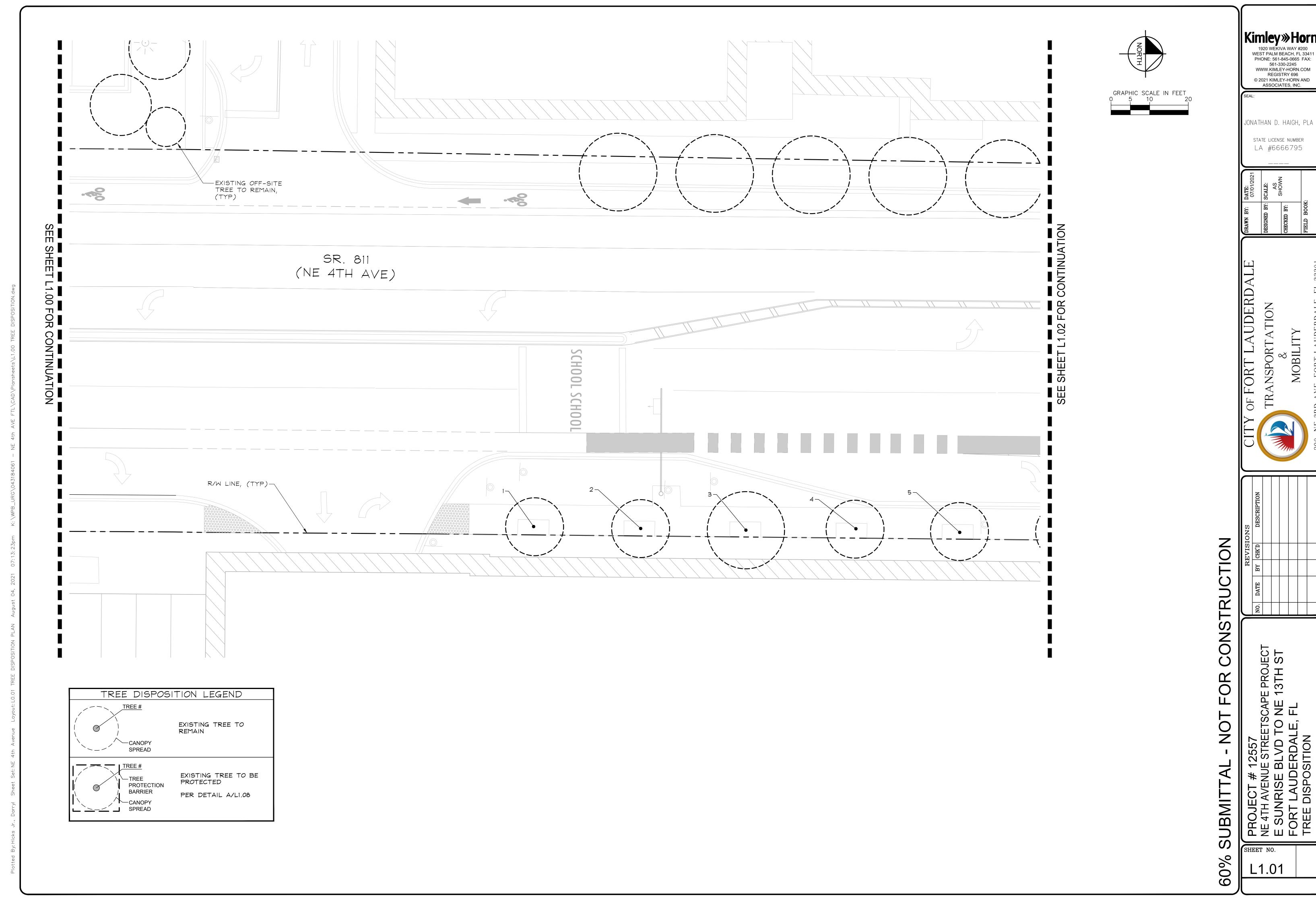
PROJECT # 12557

NE 4TH AVENUE STREETSCAPE PROJECT

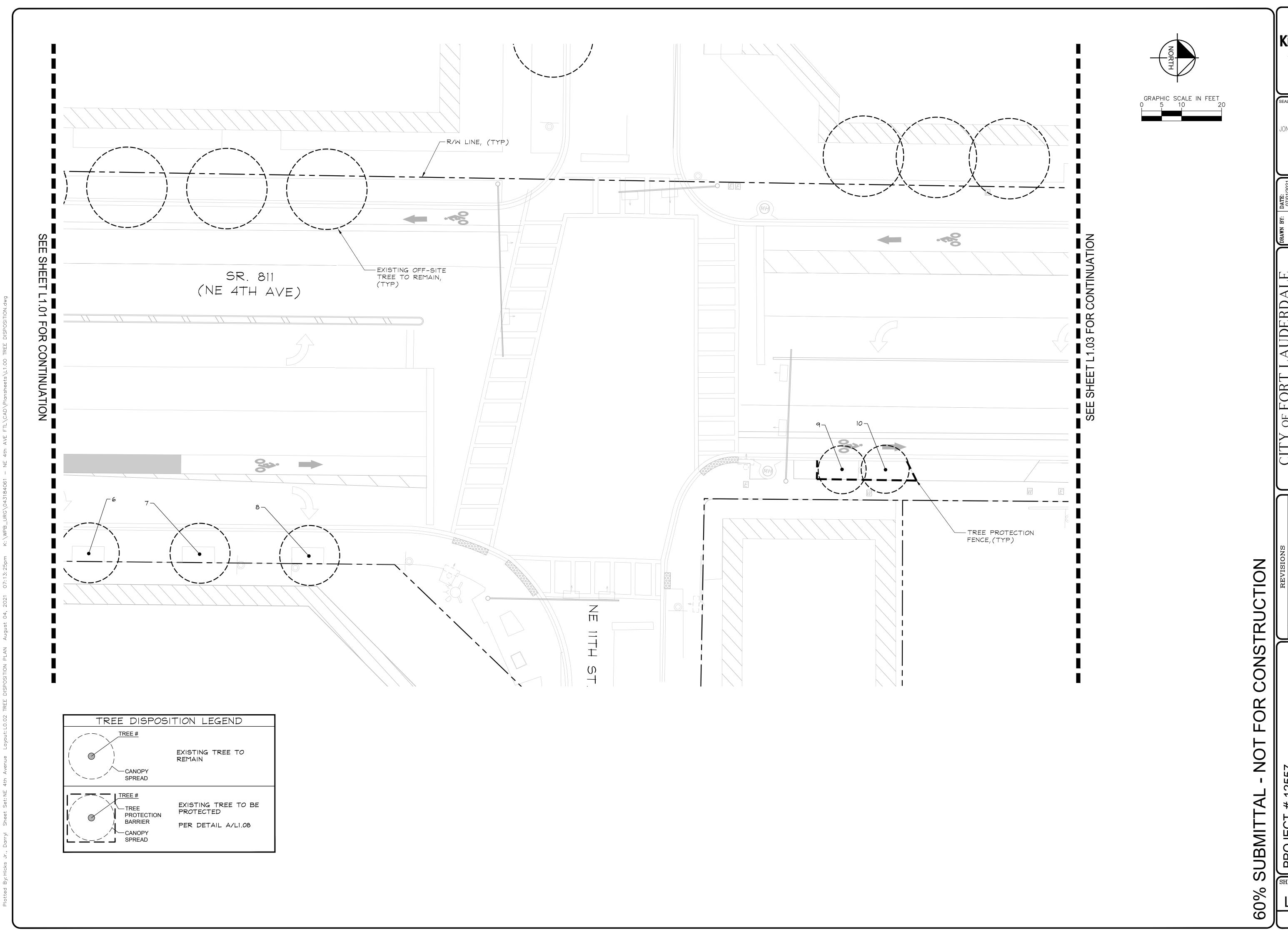
E SUNRISE BLVD TO NE 13TH ST

FORT LAUDERDALE, FL

TREE DISPOSITION



STATE LICENSE NUMBER



JONATHAN D. HAIGH, PLA

STATE LICENSE NUMBER

LA #6666795

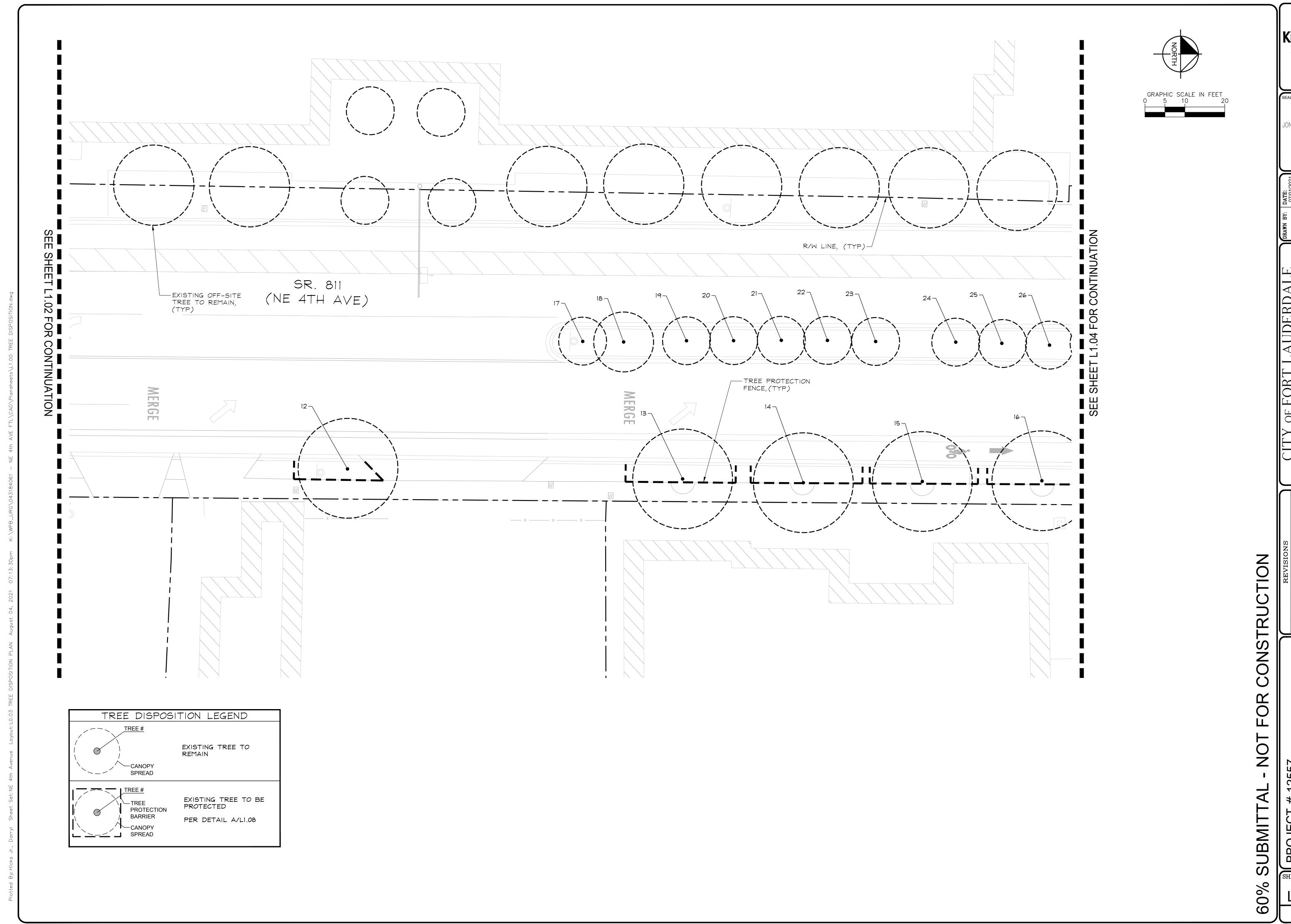
PROJECT # 12557

NE 4TH AVENUE STREETSCAPE PROJECT

E SUNRISE BLVD TO NE 13TH ST

FORT LAUDERDALE, FL

TREE DISPOSITION



JONATHAN D. HAIGH, PLA STATE LICENSE NUMBER

LA #6666795

NSPORTATION & MOBILITY

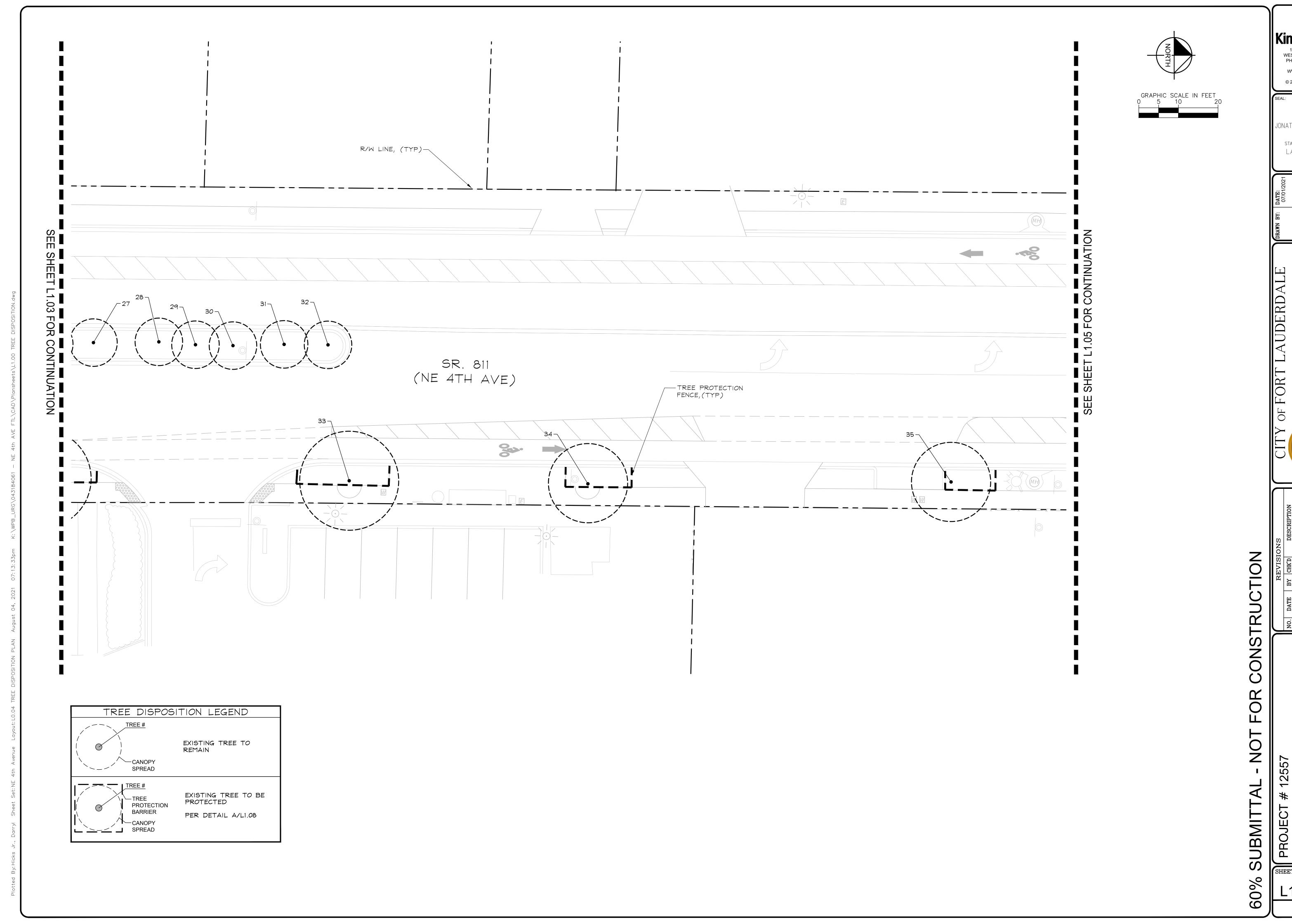
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NE 4TH AVENUE STREETSCAPE PROJECT

E SUNRISE BLVD TO NE 13TH ST

FORT LAUDERDALE, FL

TREE DISPOSITION



JONATHAN D. HAIGH, PLA

STATE LICENSE NUMBER LA #6666795

NSPORTATION & MOBILITY

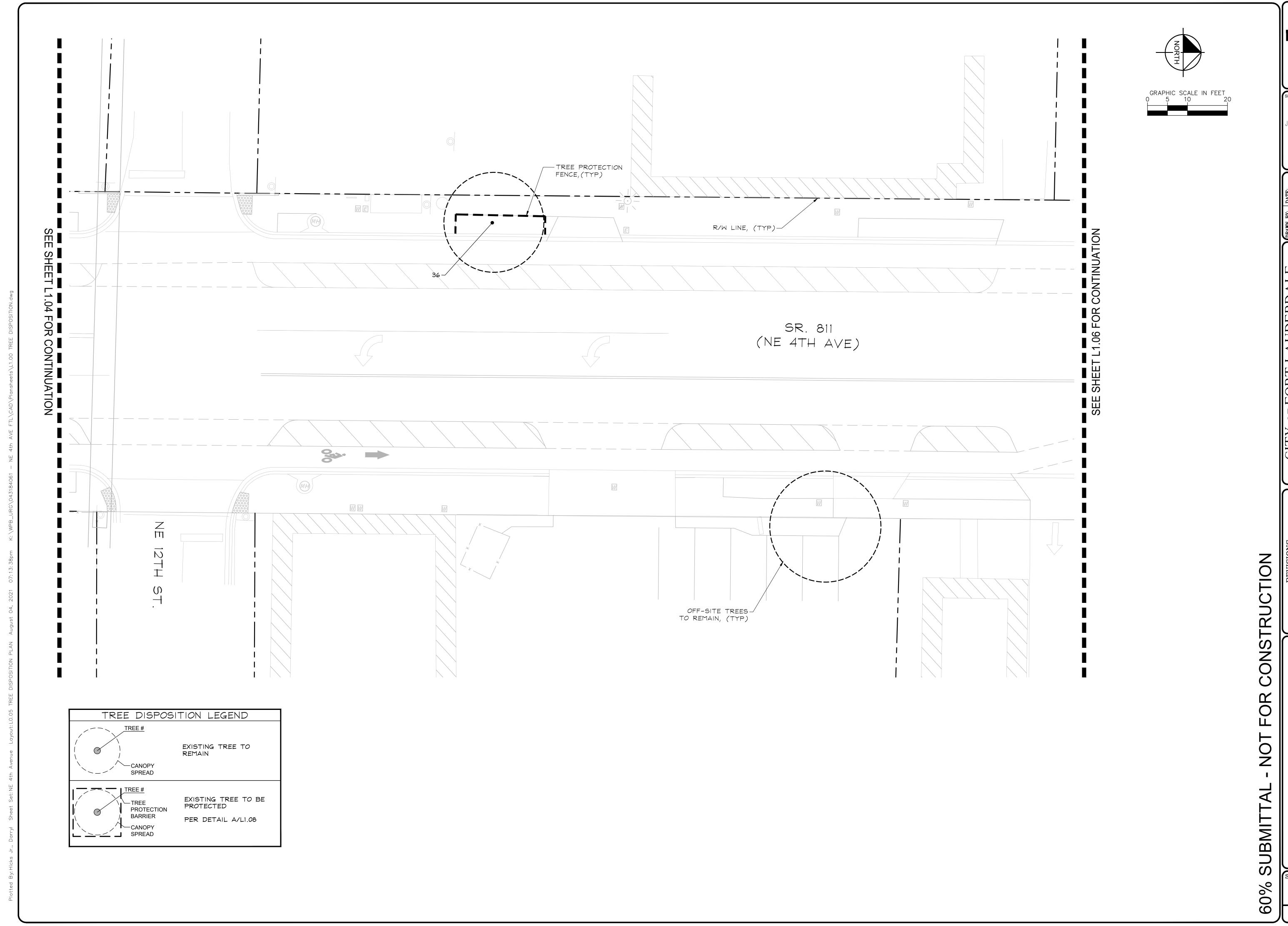
PROJECT # 12557

NE 4TH AVENUE STREETSCAPE PROJECT

E SUNRISE BLVD TO NE 13TH ST

FORT LAUDERDALE, FL

TREE DISPOSITION



JONATHAN D. HAIGH, PLA STATE LICENSE NUMBER

LA #6666795

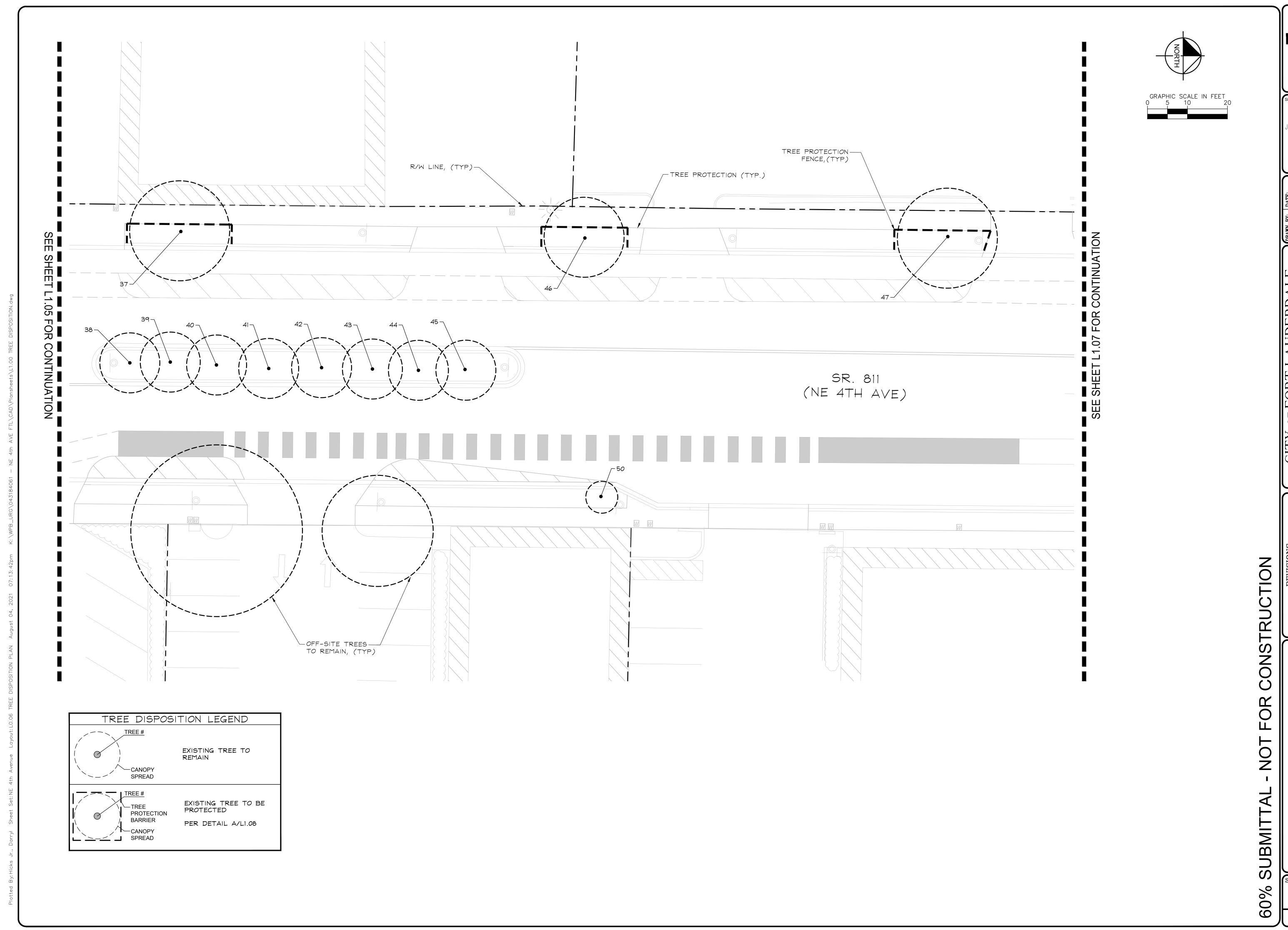
PROJECT # 12557

NE 4TH AVENUE STREETSCAPE PROJECT

E SUNRISE BLVD TO NE 13TH ST

FORT LAUDERDALE, FL

TREE DISPOSITION



JONATHAN D. HAIGH, PLA

STATE LICENSE NUMBER LA #6666795

	FIELD BOOK
	CHECKED BY:
AS	
SCALE:	DESIGNED BY: SCALE:
DATE: 07/01/2021	DRAWN BY:

NSPORTATION & MOBILIT

PROJECT # 12557

NE 4TH AVENUE STREETSCAPE PROJECT

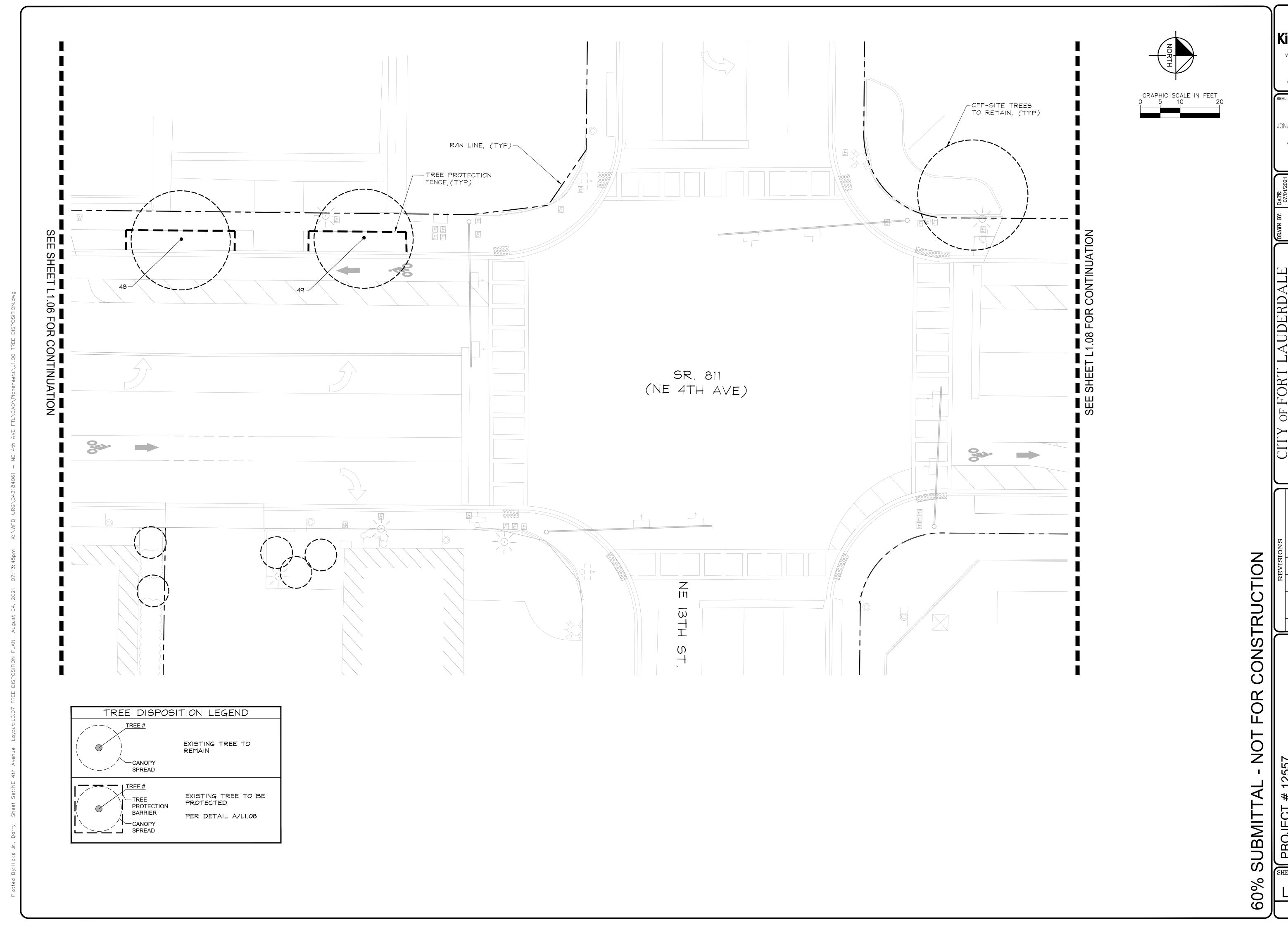
E SUNRISE BLVD TO NE 13TH ST

FORT LAUDERDALE, FL

TREE DISPOSITION

SHEET NO.

L1.06



JONATHAN D. HAIGH, PLA

STATE LICENSE NUMBER

LA #6666795

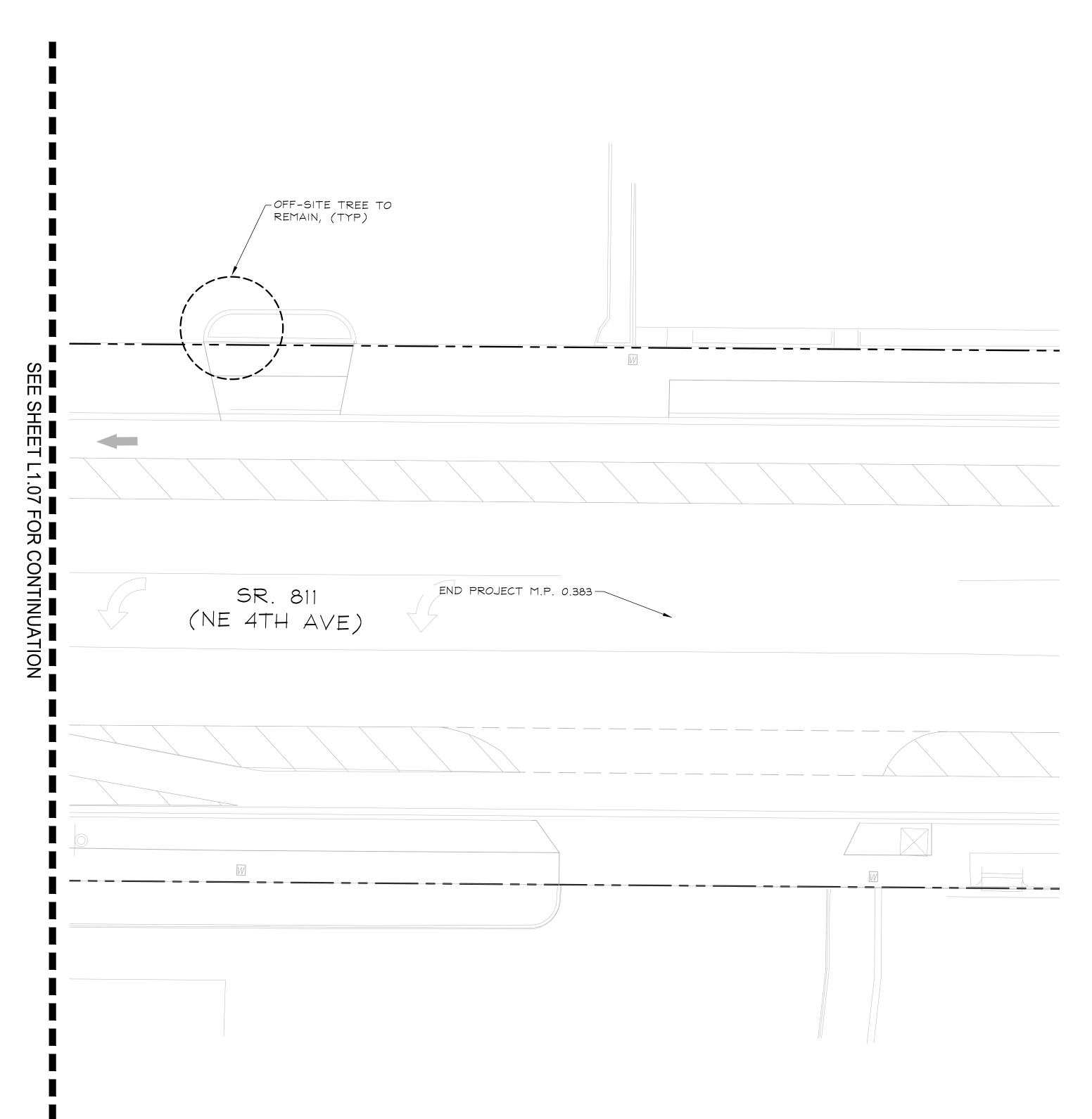
PROJECT # 12557

NE 4TH AVENUE STREETSCAPE PROJECT

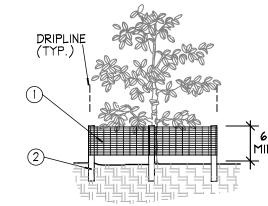
E SUNRISE BLVD TO NE 13TH ST

FORT LAUDERDALE, FL

TREE DISPOSITION

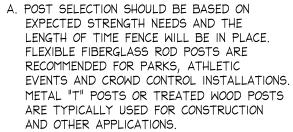


NO.	BOTANICAL NAME	COMMON NAME	DBH (in)	CT (ft)	SPR (ft)	CONDITION	DISPOSITION
1	Washingtonia robusta	Washington Palm		25	15	Good	Remain
2	Washingtonia robusta	Washington Palm		40	15	Good	Remain
3	Washingtonia robusta	Washington Palm		30	20	Good	Remain
4	Washingtonia robusta	Washington Palm		40	15	Good	Remain
5	Washingtonia robusta	Washington Palm		40	15	Good	Remain
6	Washingtonia robusta	Washington Palm		25	15	Good	Remain
7	Washingtonia robusta	Washington Palm		40	15	Good	Remain
8	Washingtonia robusta	Washington Palm		40	15	Good	Remain
9	Sabal palmetto	Cabbage Palm		10	12	Good	Remain
10	Sabal palmetto	Cabbage Palm		15	12	Good	Remain
11	Quercus virginiana	Southern Live Oak	7	25	25	Good	Remain
12	Quercus virginiana	Southern Live Oak	10	25	25	Good	Remain
13	Quercus virginiana	Southern Live Oak	6	25	25	Good	Remain
14	Quercus virginiana	Southern Live Oak	6	25	25	Good	Remain
15	Quercus virginiana	Southern Live Oak	6	25	25	Good	Remain
16	Quercus virginiana	Southern Live Oak	6	25	25	Good	Remain
17	Veitchia arecina	Montgomery Palm		15	12	Good	Remain
18	Veitchia arecina	Montgomery Palm		15	15	Good	Remain
19	Elaeocarpus decipiens	Japanese Blueberry	2	12	5	Good	Remain
20	Elaeocarpus decipiens	Japanese Blueberry	2	12	5	Good	Remain
21	Elaeocarpus decipiens	Japanese Blueberry	2	12	5	Good	Remain
22	Elaeocarpus decipiens	Japanese Blueberry	2	12	5	Good	Remain
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25	Elaeocarpus decipiens	Japanese Blueberry	2	12	5	Good	Remain
26	Elaeocarpus decipiens	Japanese Blueberry	2	12	5	Good	Remain
27	Elaeocarpus decipiens	Japanese Blueberry	2	12	5	Good	Remain
28	Elaeocarpus decipiens	Japanese Blueberry	2	12	5	Good	Remain
29	Elaeocarpus decipiens	Japanese Blueberry	2	12	5	Good	Remain
30	Elaeocarpus decipiens	Japanese Blueberry	2	12	5	Good	Remain
31	Veitchia arecina	Montgomery Palm		12	15	Good	Remain
32	Veitchia arecina	Montgomery Palm		12	15	Good	Remain
33	Quercus virginiana	Southern Live Oak	14	30	25	Good	Remain
34	Quercus virginiana	Southern Live Oak	10	30	20	Good	Remain
35	Quercus virginiana	Southern Live Oak	8	25	20	Good	Remain
36	Quercus virginiana	Southern Live Oak	8	30	25	Good	Remain
37	Quercus virginiana	Southern Live Oak		35	25	Good	Remain
38	Veitchia arecina	Montgomery Palm		20	15	Good	Remain
39	Veitchia arecina	Montgomery Palm		20	15	Good	Remain
40	Veitchia arecina	Montgomery Palm		30	15	Good	Remain
41	Veitchia arecina	Montgomery Palm		20	15	Good	Remain
42	Veitchia arecina	Montgomery Palm		30	15	Good	Remain
43	Veitchia arecina	Montgomery Palm		20	15	Good	Remain
44	Veitchia arecina	Montgomery Palm		30	15	Good	Remain
45	Veitchia arecina	Montgomery Palm		20	15	Good	Remain
46	Quercus virginiana	Southern Live Oak	8	25	20	Good	Remain
47	Quercus virginiana	Southern Live Oak	10	25	25	Good	Remain
48	Quercus virginiana	Southern Live Oak	8	30	25	Good	Remain
49	Quercus virginiana	Southern Live Oak	10	30	25	Good	Remain
50	Phoenix roebelenii	Pygmy Date Palm		6	8	Good	Remain



(2) 8' TALL METAL "T" POSTS OR 2" x 2" X 8' PRESSURE TREATED WOOD POSTS WITH 24" BURIAL BELOW GRADE.

INSTALLATION NOTES:



B. POSTS SHOULD BE DRIVEN INTO THE GROUND TO A DEPTH OF 1/4 OF THE HEIGHT OF THE POST. FOR EXAMPLE, A 8' POST SHOULD BE SET AT LEAST 2' INTO THE GROUND.

C. SPACE POSTS EVERY 6' (MIN.) TO 8' (MAX.).

D. SECURE FENCING TO POST WITH NYLON CABLE TIES (AVAILABLE FROM CONWED PLASTICS). WOOD STRIPS MAY BE ALSO BE USED TO PROVIDE ADDITIONAL SUPPORT AND PROTECTION BETWEEN TIES AND POSTS.

NOTE: IF WIRE TIES ARE USED, AVOID DIRECT CONTACT WITH FENCE. WIRE MAY DAMAGE FENCE OVER TIME.

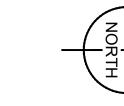
Tree/Shrub Protector

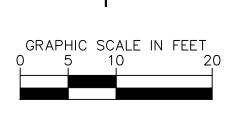
Barrier Detail

CONNECTION

CORNER

CONNECTION





- 1. TREE PRUNING WORK MUST BE PERFORMED BY OR DIRECTLY SUPERVISED BY AN ISA CERTIFIED
- 2. CONTRACTOR SHALL HOLD A PRE-PRUNING ARCHITECT PRIOR TO COMMENCING PRUNING OPERATIONS.
- 3. PRUNE TREES PER ANSI A300 FOR THE FOLLOWING:
 - 3.1. MAINTENANCE TO MAINTAIN OR IMPROVE THE
- 3.2. HAZARD REDUCTION TO REMOVE DEAD LIMBS OR OTHER VISIBLE HAZARDS FROM THE TREE CANOPY
- 3.3. CROWN CLEANING TO SELECTIVELY REMOVE DEAD, DYING OR DISEASED BRANCHES, WEAK
- 3.4. <u>CROWN RAISING</u> TO REMOVE LOWER BRANCHES ■営
- 3.5. <u>VISTA PRUNING</u> TO SELECTIVELY THIN
- FOR VIEWS THROUGH THE TREE 3.6. CROWN RESTORATION - TO IMPROVE THE THAT HAS BEEN DAMAGED, HEADED, OR

EXISTING TREE - PRUNING NOTES:

ARBORIST.

CONFERENCE WITH THE OWNER AND LANDSCAPE

JONATHAN D. HAIGH, PLA

STATE LICENSE NUMBER TREE'S HEALTH AND STRUCTURE LA #6666795

BRANCHES, AND SUCKER SPROUTS.

TO PROVIDE VERTICAL CLEARANCE FRAMEWORK LIMBS WITHIN THE CROWN TO ALLOW

STRUCTURE, FORM, AND APPEARANCE OF A TREE VANDALIZED

> CONSTRUCTION SUBMIT

> > %09

PROJECT # 12557

NE 4TH AVENUE STREETSC,
E SUNRISE BLVD TO N
FORT LAUDERDALE, F
TREE DISPOSITION SHEET NO.

L1.08

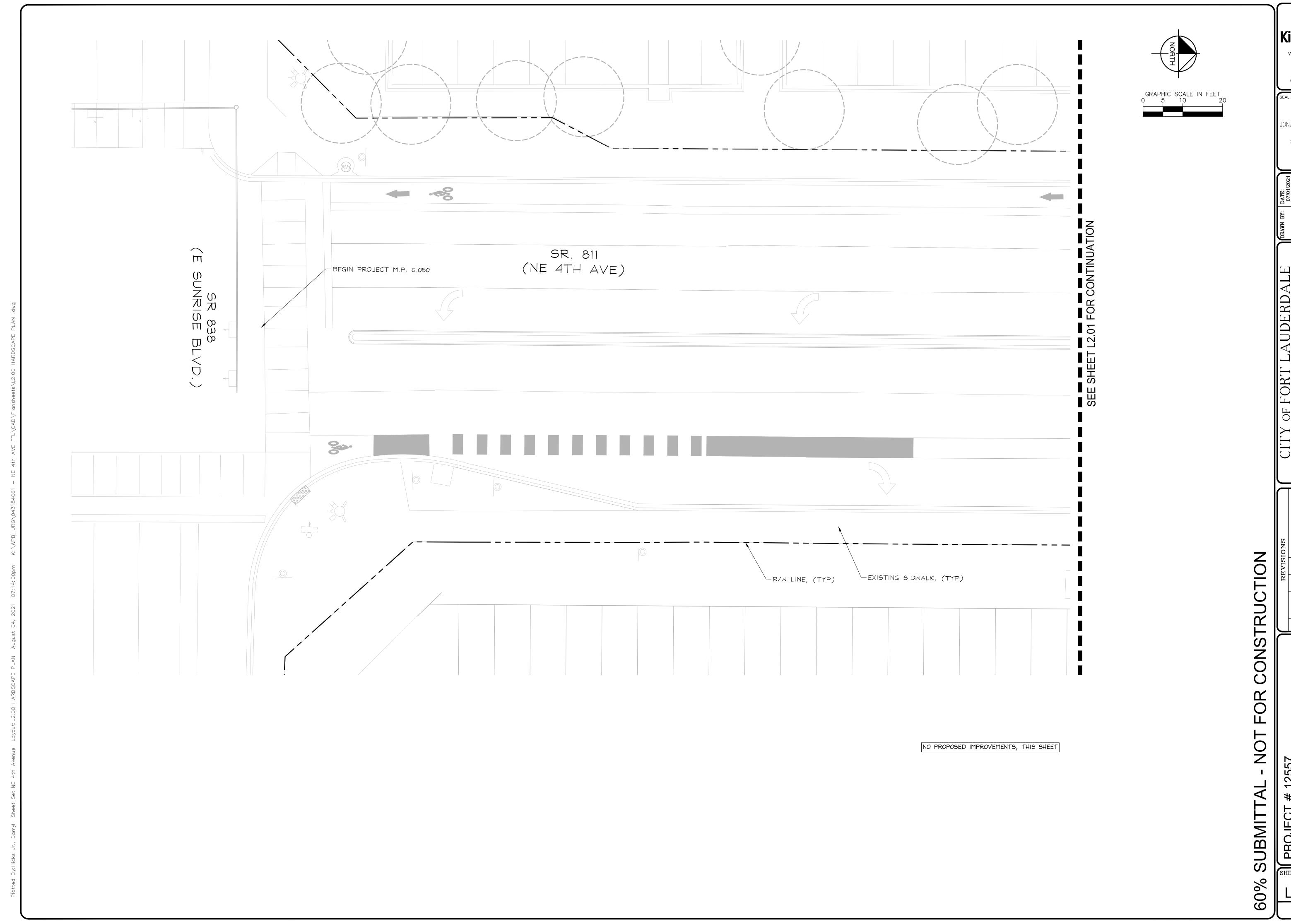
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STATE LICENSE NUMBER LA #6666795

& MOBILITY

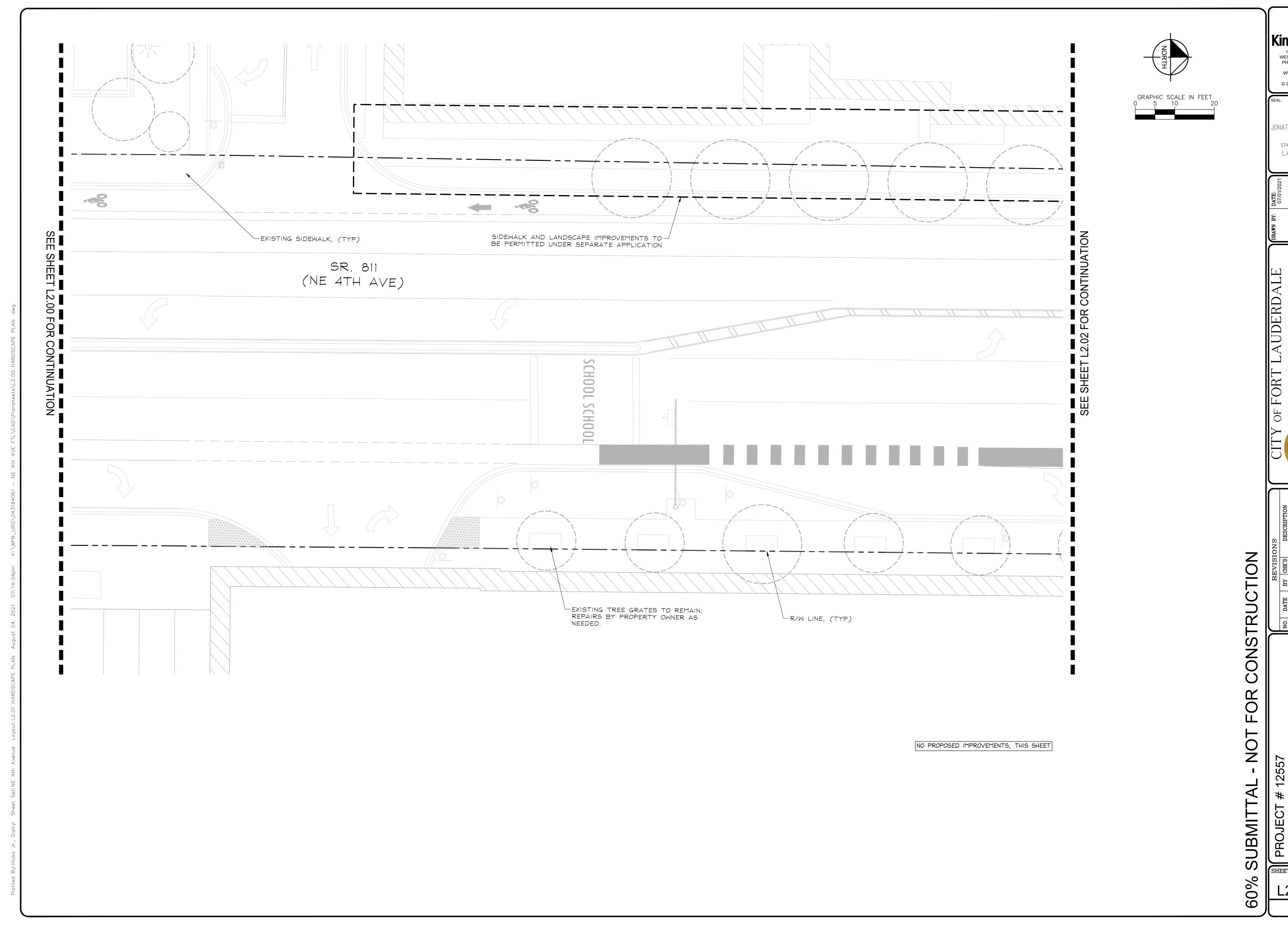
PROJECT # 12557

NE 4TH AVENUE STREETSCAPE PROJECT

E SUNRISE BLVD TO NE 13TH ST

FORT LAUDERDALE, FL

HARDSCAPE PLAN



JONATHAN D. HAIGH, PLA

STATE LICENSE NUMBER LA #6666795

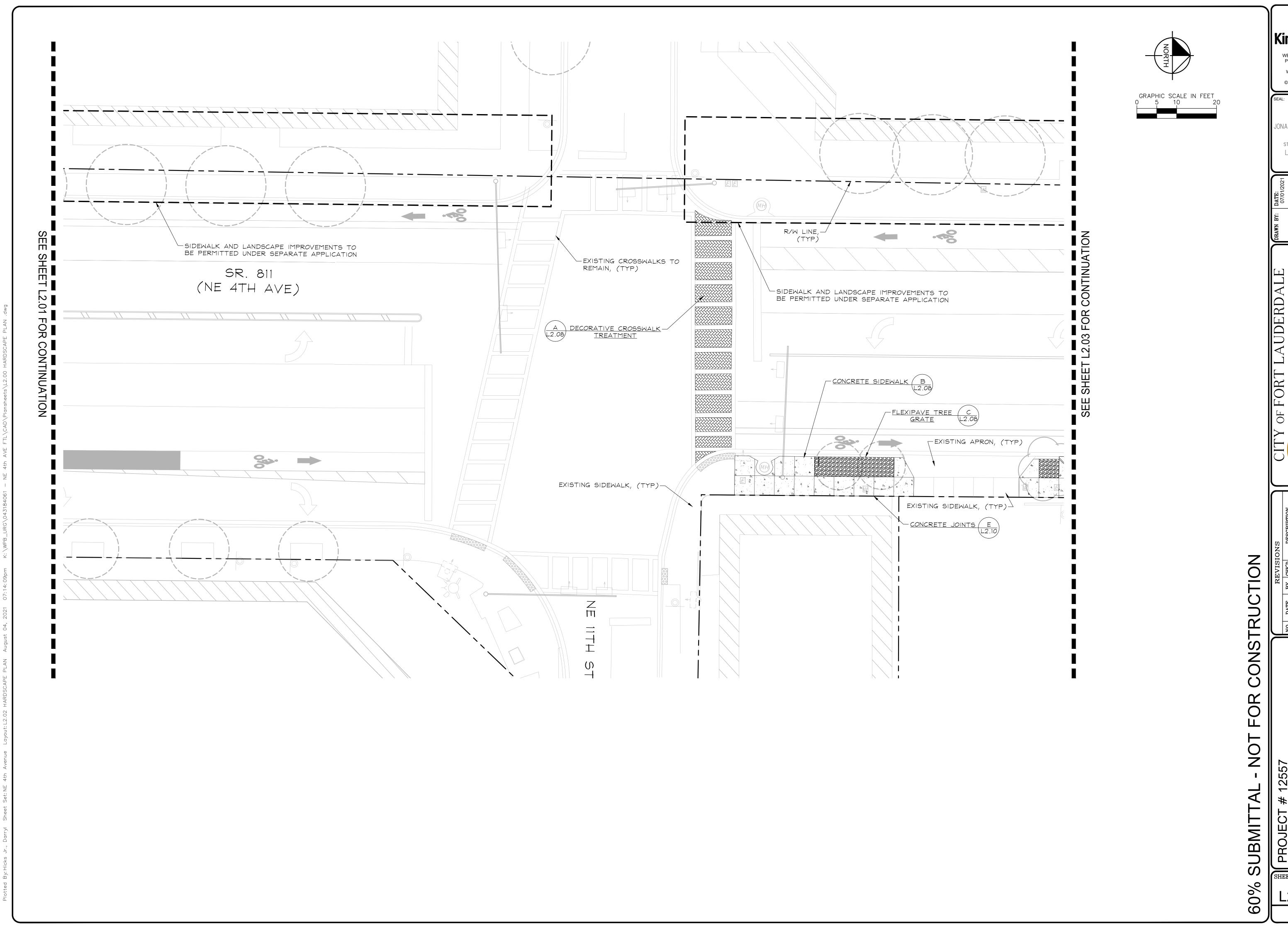
PROJECT # 12557

NE 4TH AVENUE STREETSCAPE PROJECT

E SUNRISE BLVD TO NE 13TH ST

FORT LAUDERDALE, FL

HARDSCAPE PLAN



Kimley >>> Horn

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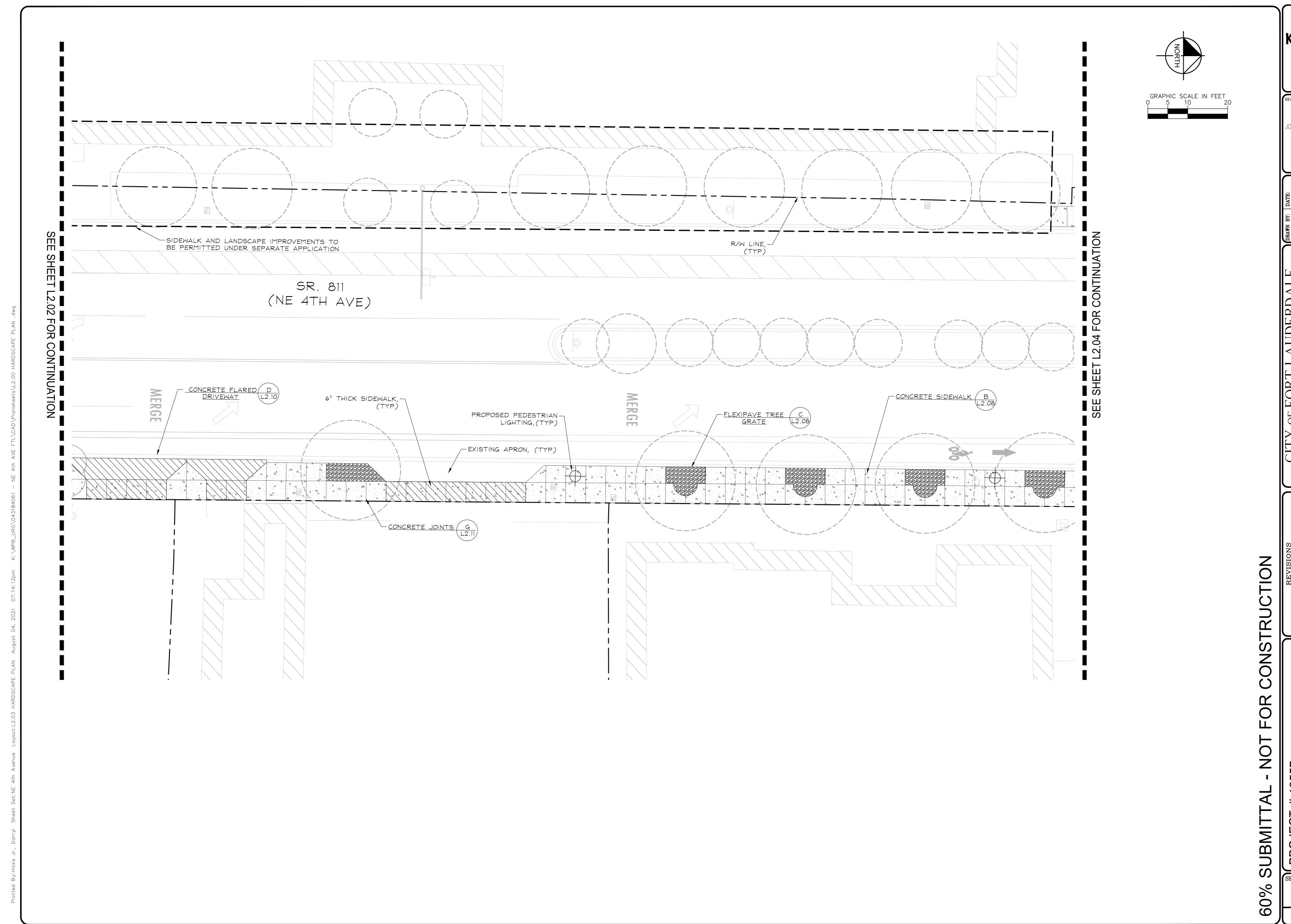
PROJECT # 12557

NE 4TH AVENUE STREETSCAPE PROJECT

E SUNRISE BLVD TO NE 13TH ST

FORT LAUDERDALE, FL

HARDSCAPE PLAN



Kimley >>> Horn

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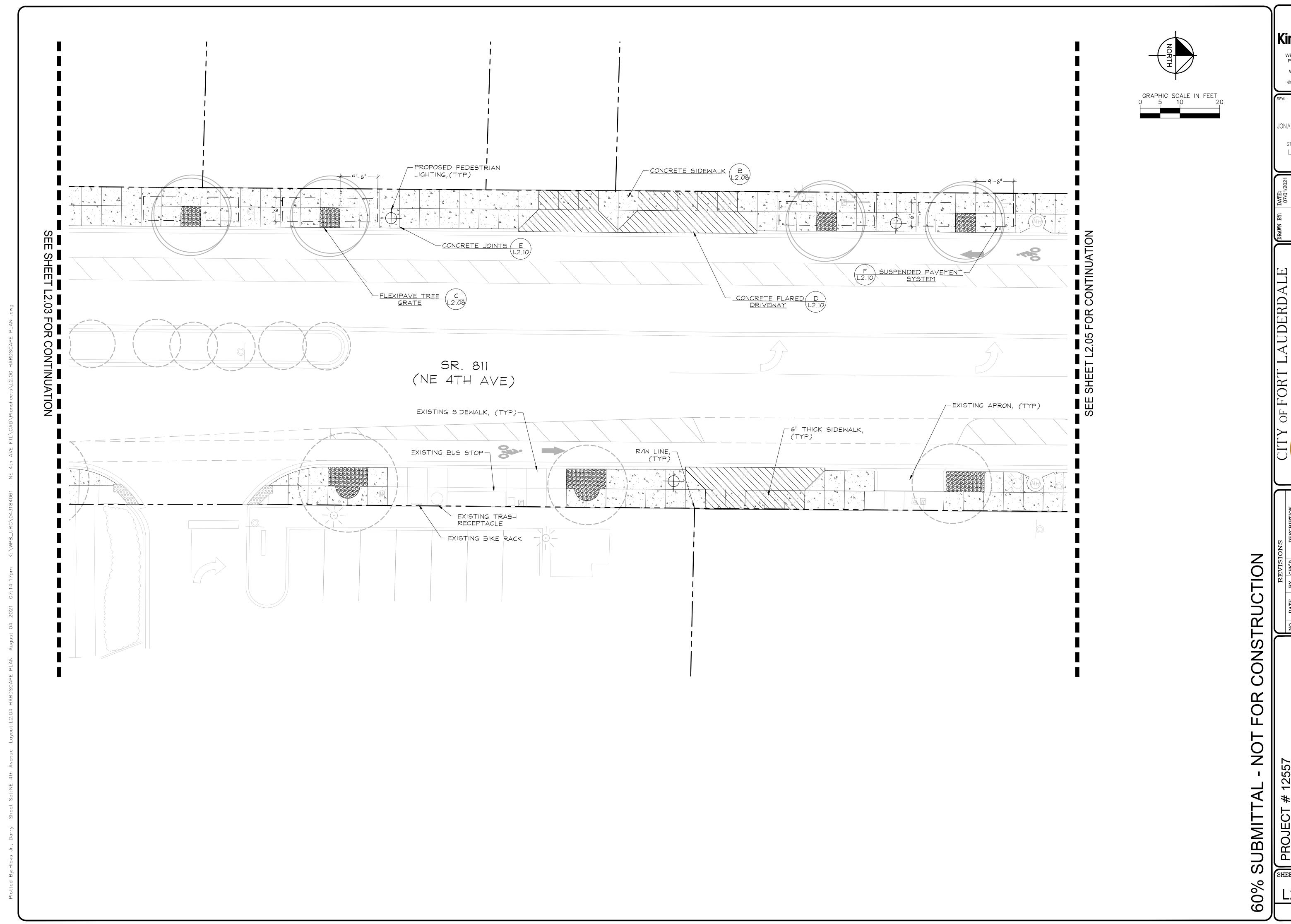
PROJECT # 12557

NE 4TH AVENUE STREETSCAPE PROJECT

E SUNRISE BLVD TO NE 13TH ST

FORT LAUDERDALE, FL

HARDSCAPE PLAN



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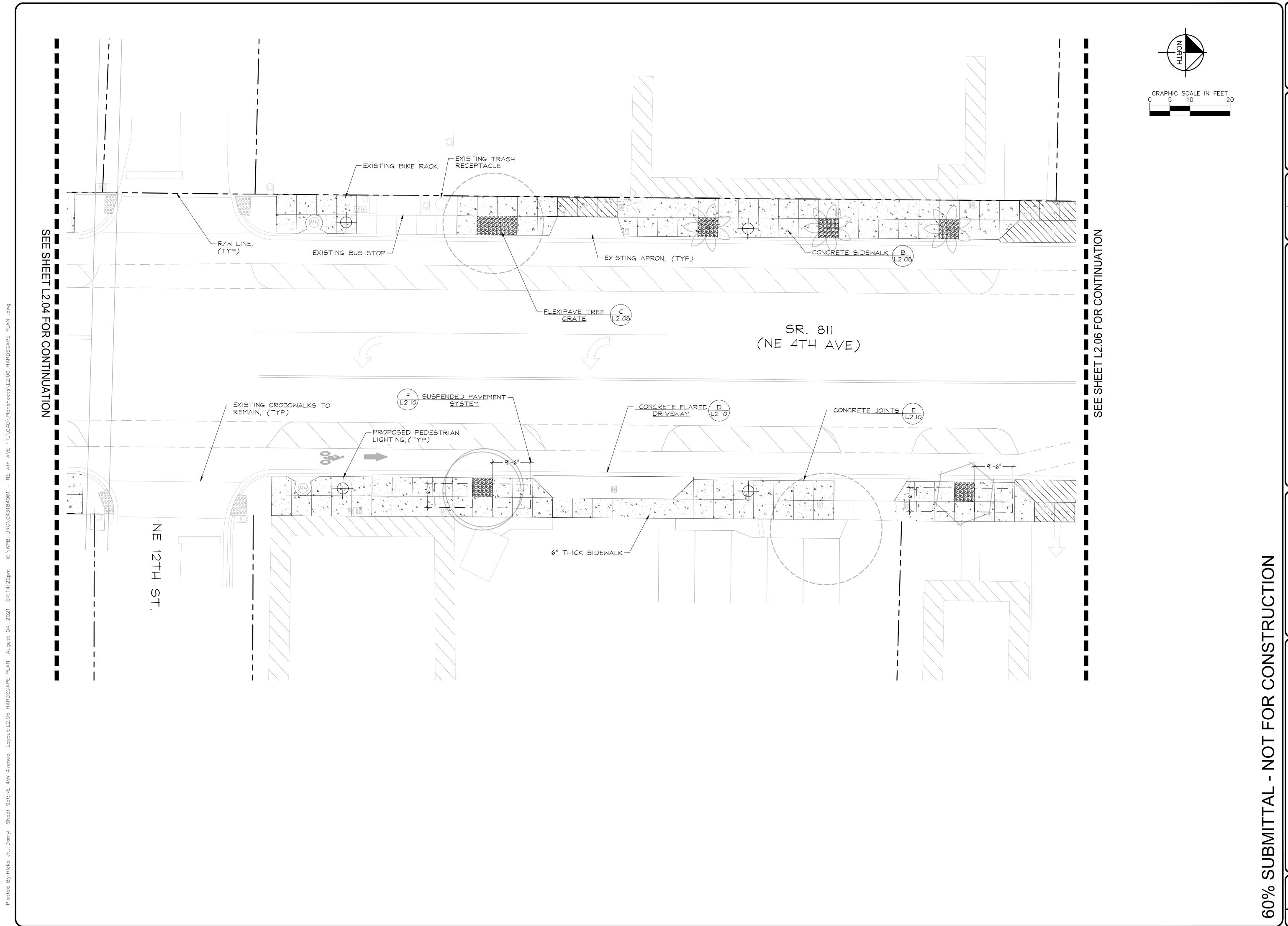
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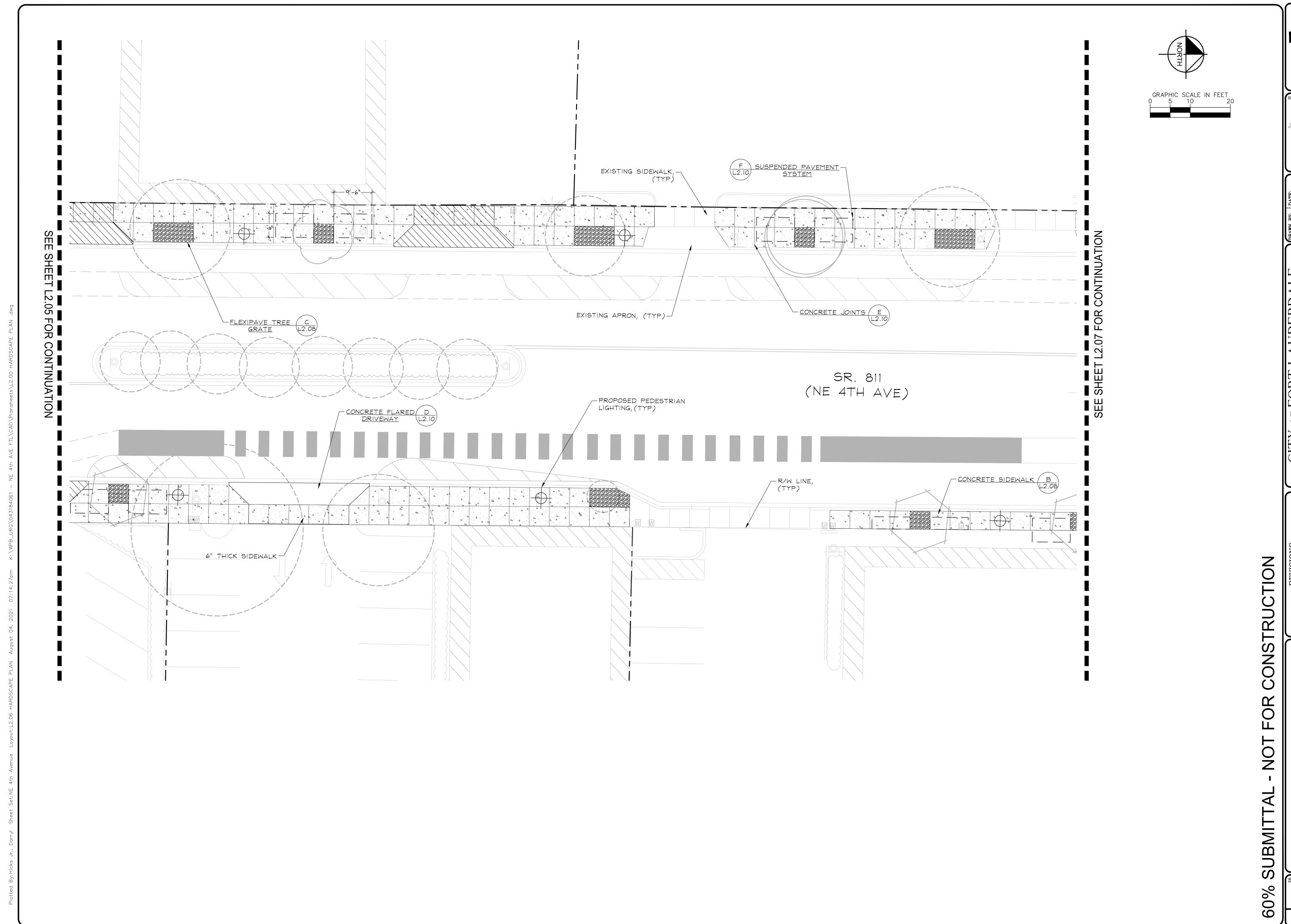
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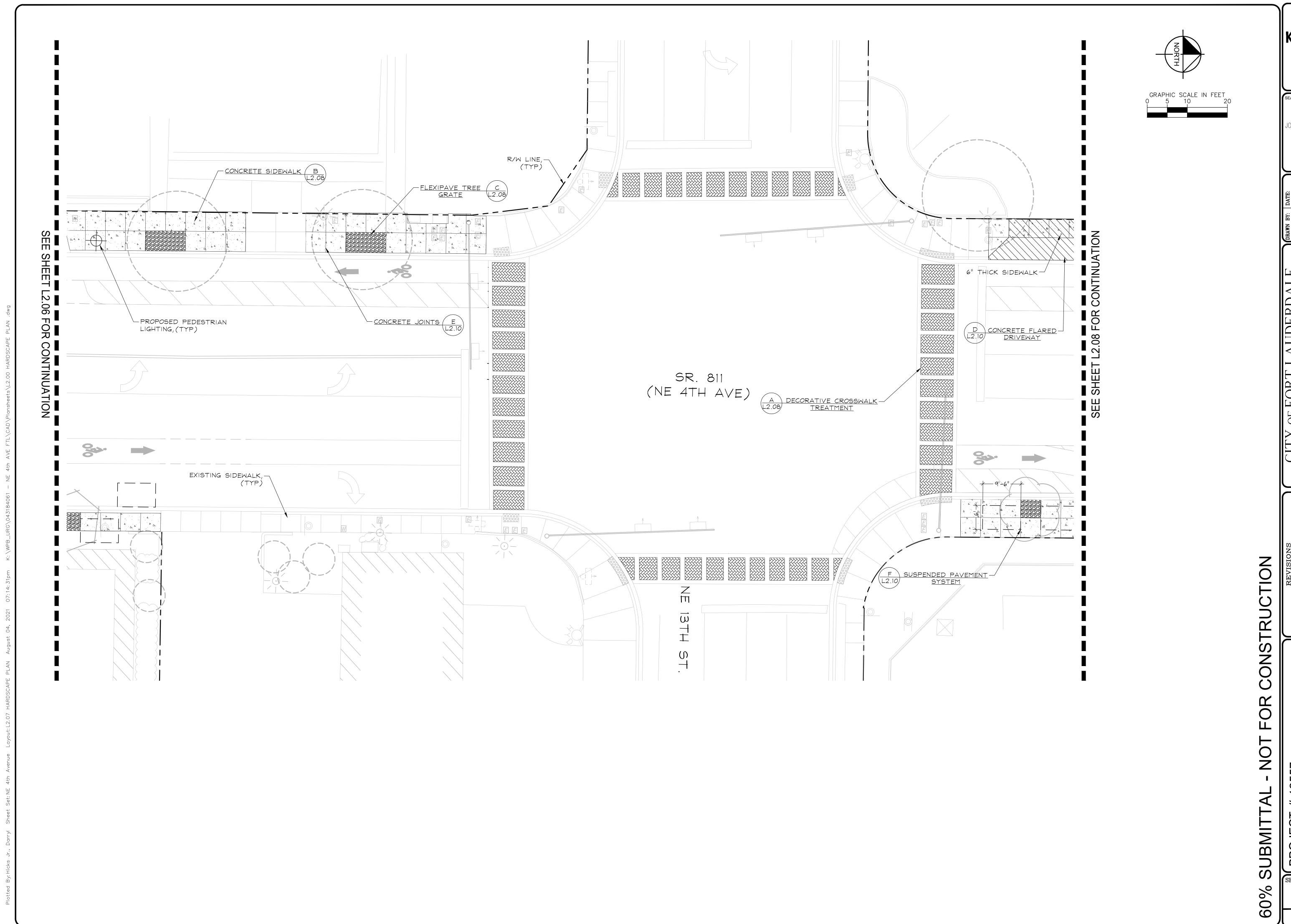
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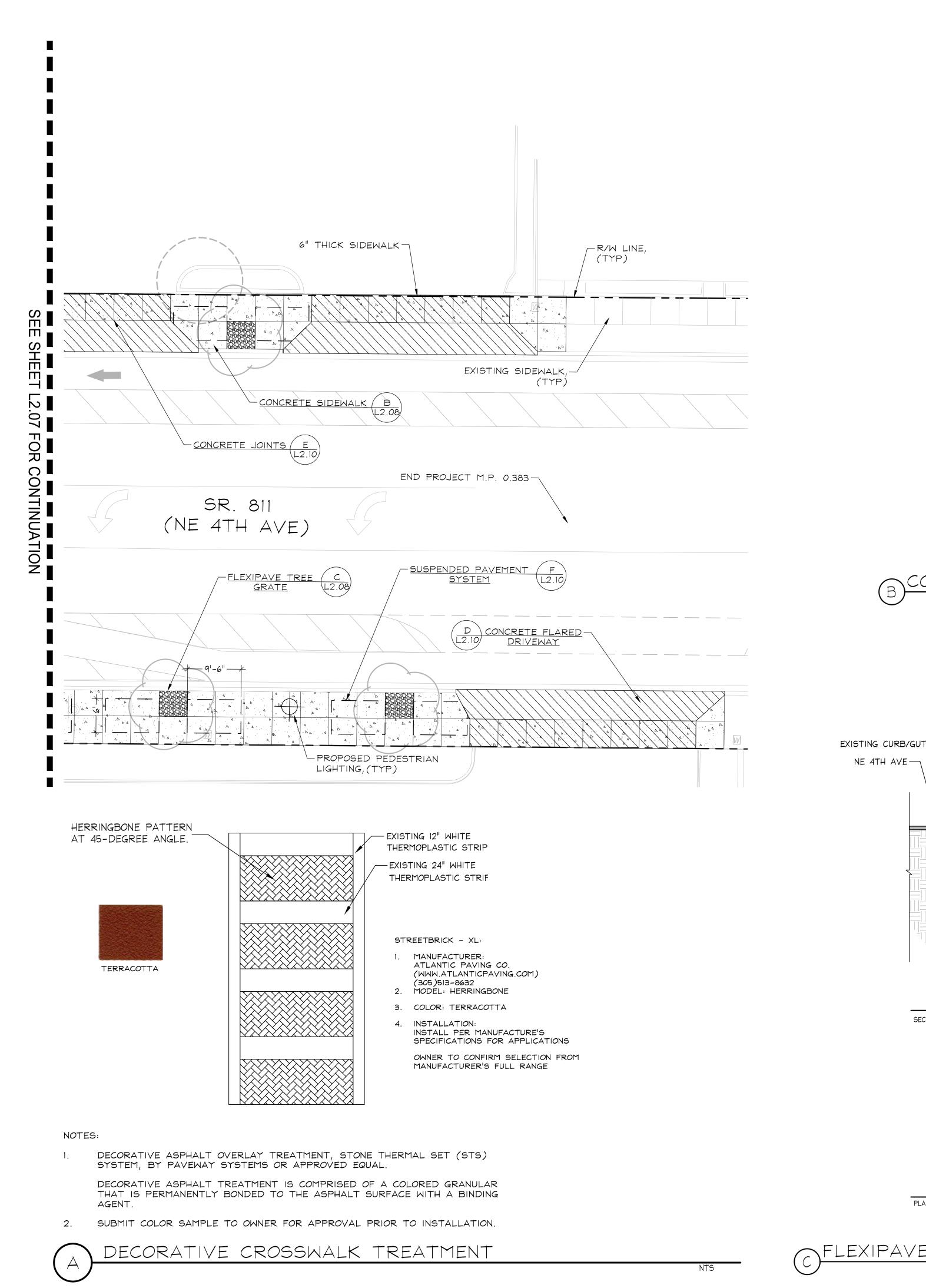
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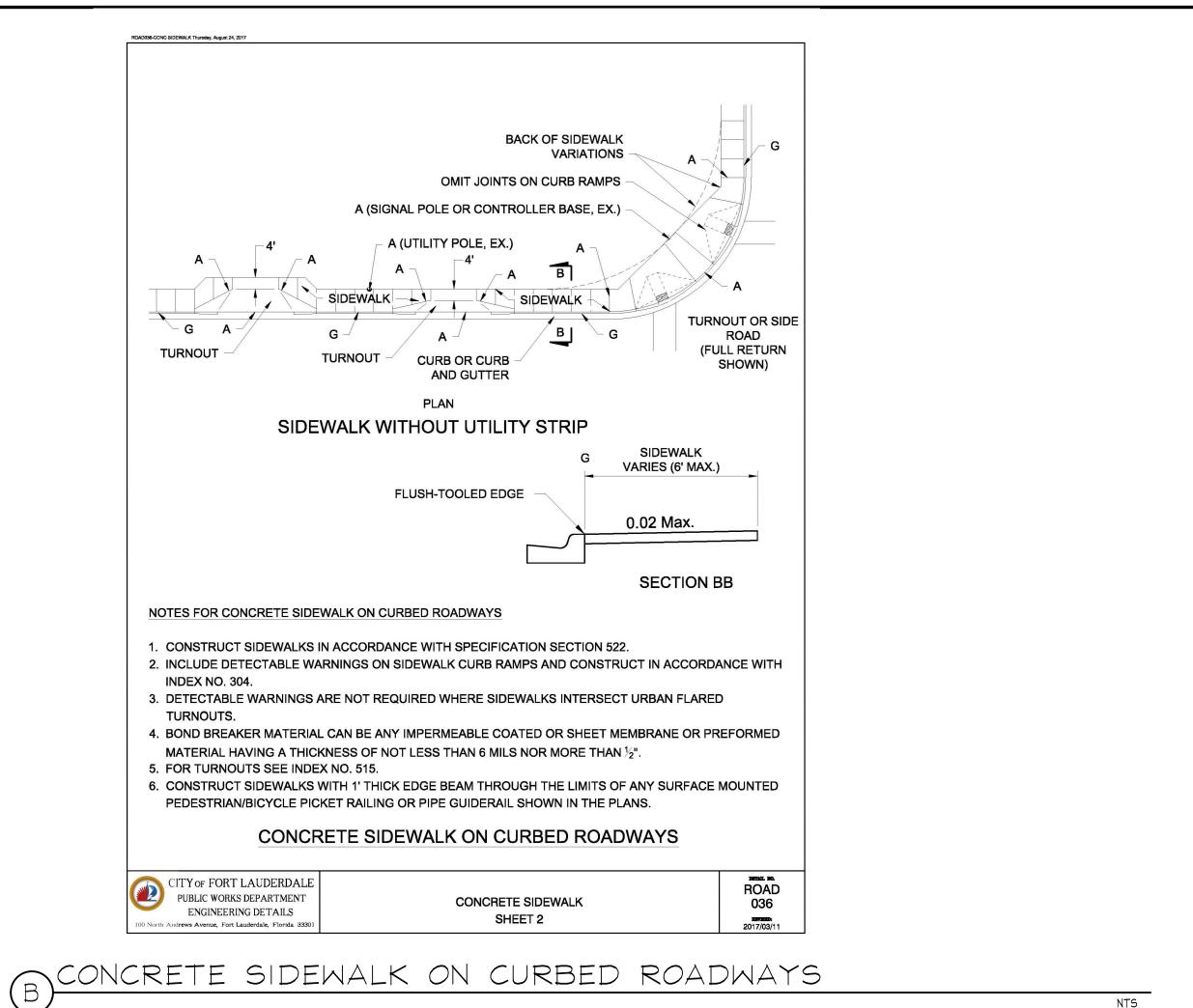
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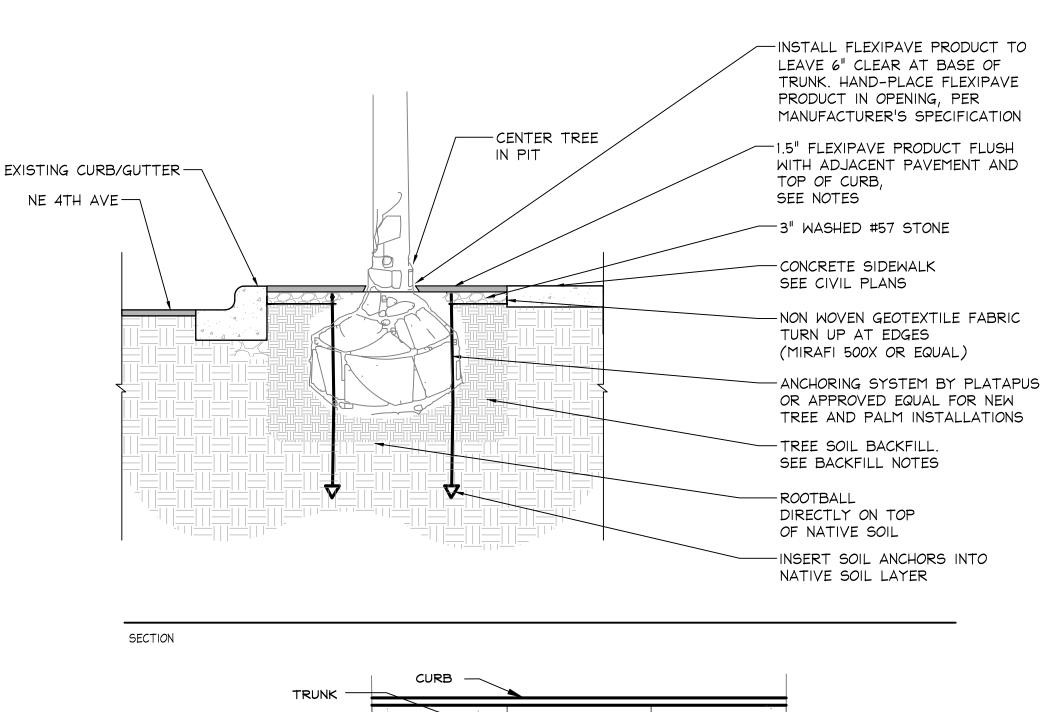
E SUNRISE BLVD TO NE 13TH ST

FORT LAUDERDALE, FL

HARDSCAPE PLAN







10 6" ROUND IRRIGATION BOX (TAN) FOR INSTALLATION OF BUBBLERS. COORDINATE WITH-. 4 -DIMENSIONS PER PLAN IRRIGATION Δ . Δ CONTRACTOR FOR LOCATION.

RUBBERIZED TREE PIT NOTES:

- IRRIGATION BUBBLERS: INSTALL TWO (2) 6" ROUND NDS PLASTIC VALVE BOXES, SPACED EQUALLY AROUND THE TREE. BOXES TO BE SAND/TAN IN
- 2. RUBBERIZED TREE PIT PRODUCT:BY KBI INDUSTRIES INC. 1 (777) 723-3300 FLEXIPAVE HD2000 THICKNESS: 1.5" - OR AS REQUIRED BY MANUFACTURER COLOR: CYPRESS QUANTITY: 13 SQUARE PITS (5'X5')
- 3. FILL VOID BETWEEN RUBBERIZED TREE PIT PRODUCT AND TOP OF ROOT BALL PER DETAIL.

4. KBI QUALIFIED INSTALLER.

(C) FLEXIPAVE TREE GRATE

SHEET NO.

PROJECT # 12557

NE 4TH AVENUE STREETSC

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HARDSCAPE PLAN

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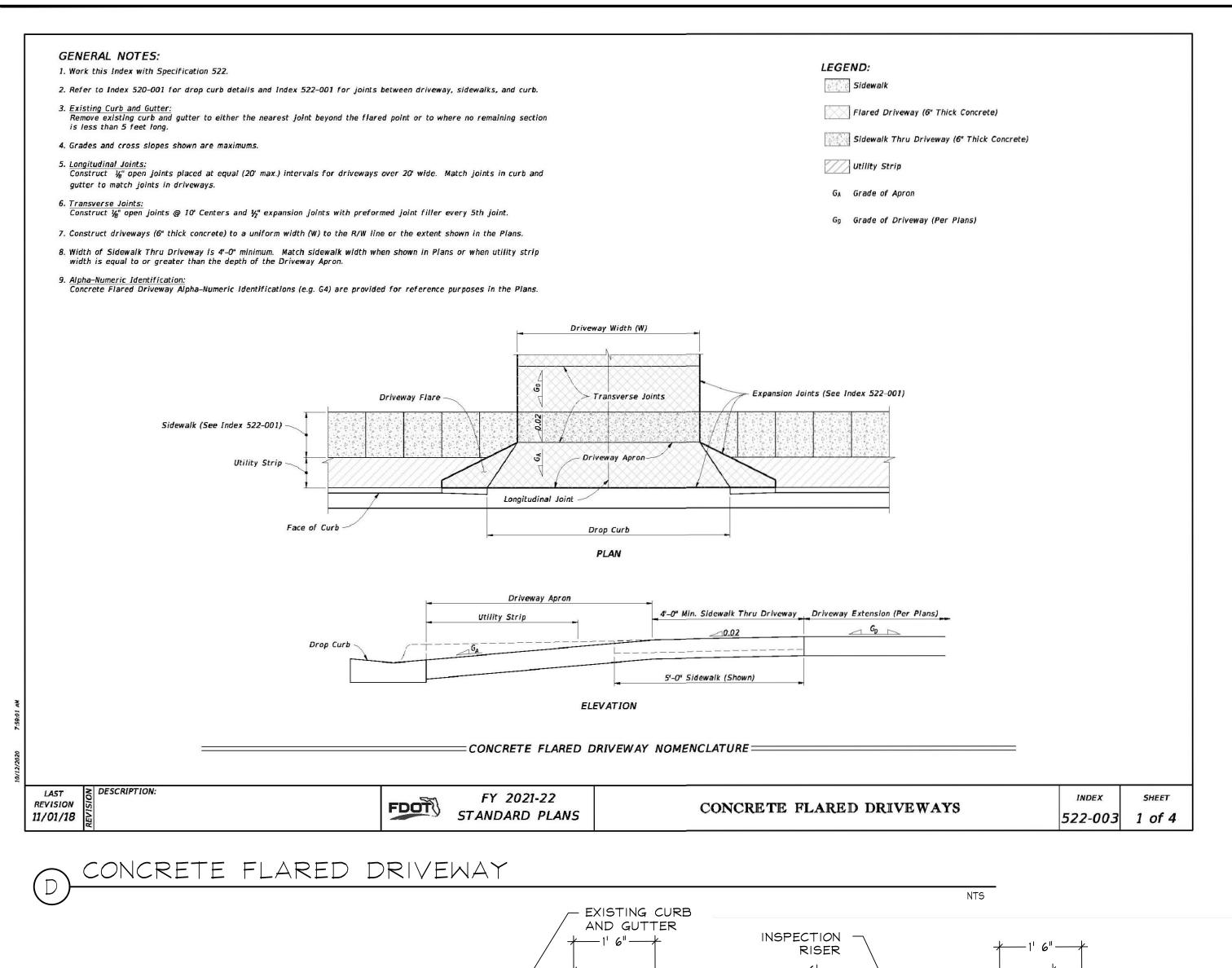
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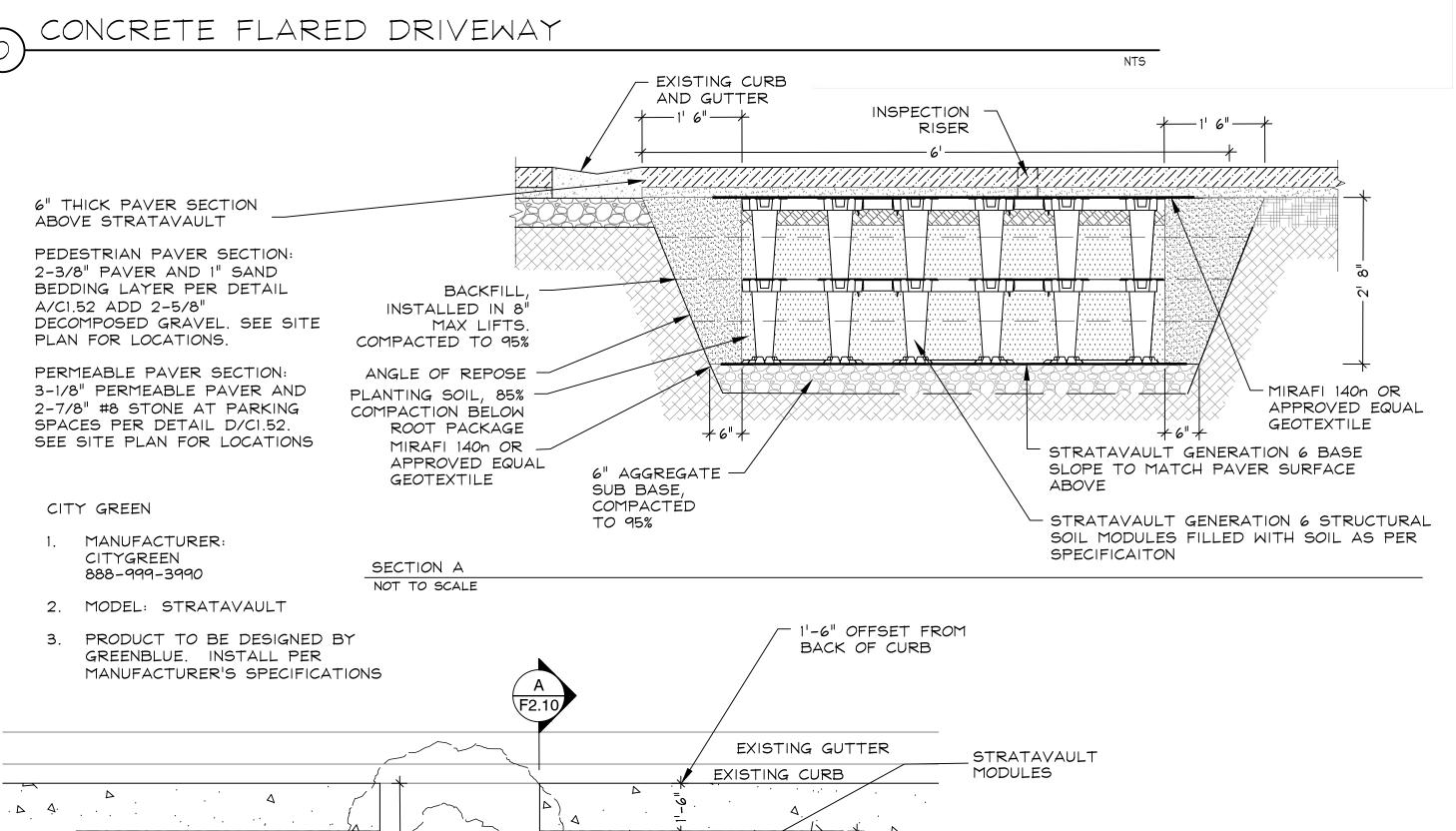
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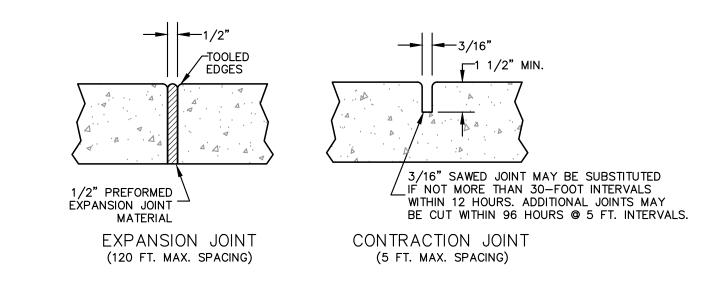
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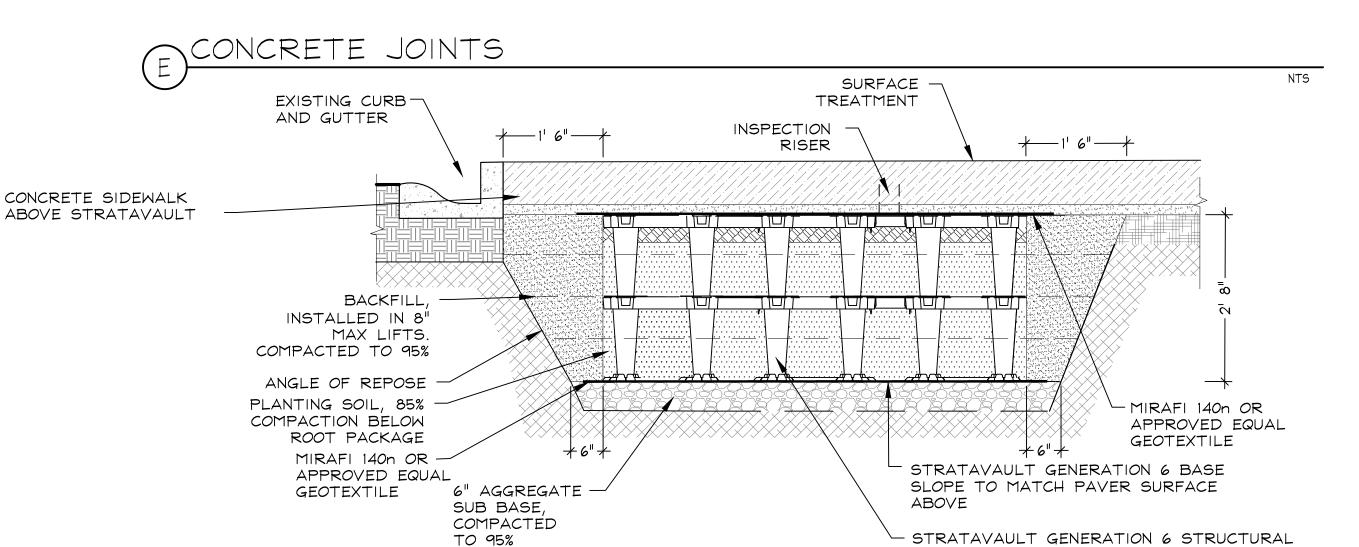
SECTION B

NOT TO SCALE

- PROVIDE EXPANSION JOINTS BETWEEN NEW SIDEWALK AND EXISTING SIDEWALK, CURB, OR AT ANY OTHER RIGID STRUCTURE. EXPANSION JOINTS ALONG SIDEWALK SHALL BE PROVIDED AT 120 FT. MAXIMUM SPACING.
- 2. ULTIMATE COMPRESSIVE STRENGTH OF CONCRETE SHALL BE 3,000 P.S.I. @ 28 DAYS.
- 3. MINIMUM THICKNESS OF SIDEWALK SHALL BE AS SHOWN BELOW (WITH THICKENED EDGE AS SHOWN).
- 4. FOR SIDEWALKS WITH ANY VEHICULAR TRAFFIC, COMPACT SUBGRADE TO 98% OF MAXIMUM DENSITY AS DETERMINED BY ASTM1557. FOR SIDEWALKS WITH ONLY PEDESTRIAN TRAFFIC, COMPACTION MAY BE 95%
- OF MAXIMUM DENSITY.

 5. TOOLED CONTRACTION JOINT SHALL BE PROVIDED AT 5 FT. MAXIMUM SPACING. SAWED CONTRACTION JOINT MAY BE SUBSTITUTED IF CUT AT NO MORE THAN 30 FT. INTERVALS WITHIN 12 HOURS AFTER

CONCRETE HAS SET. ADDITIONAL CUTS @ 5 FT. INTERVALS MUST BE CUT WITHIN 96 HOURS.



SUBMITTAL - NOT FOR CONSTRUCTION

09

PROJECT # 12557

NE 4TH AVENUE STREETSCAPE

E SUNRISE BLVD TO NE 1

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HARDSCAPE DETAILS

PRO. 3TH

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SUSPENDED PAVEMENT SYSTEM

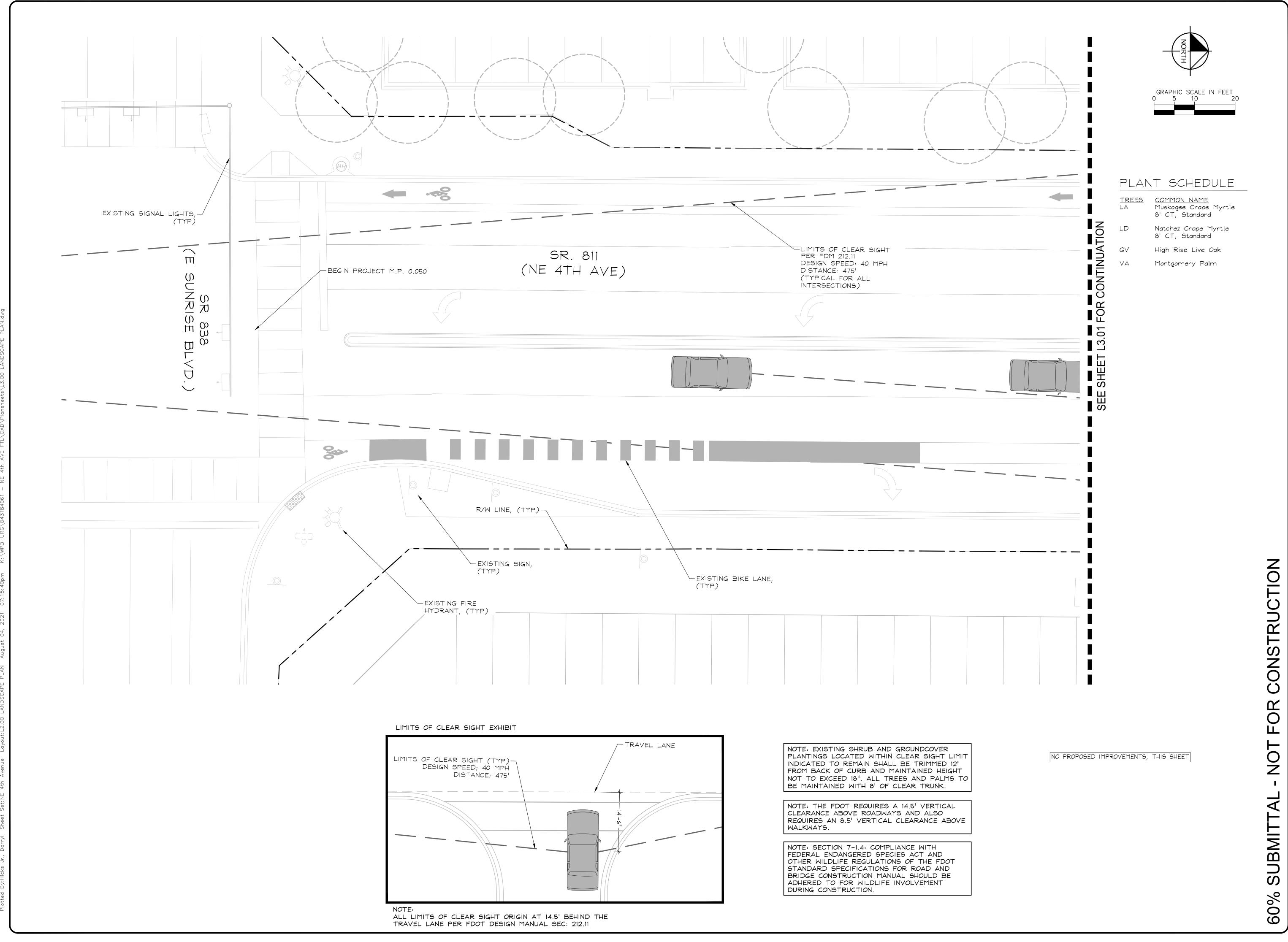
PLANTER

CONCRETE SIDEWALK

NTS

SOIL MODULES FILLED WITH SOIL AS PER

SPECIFICAITON



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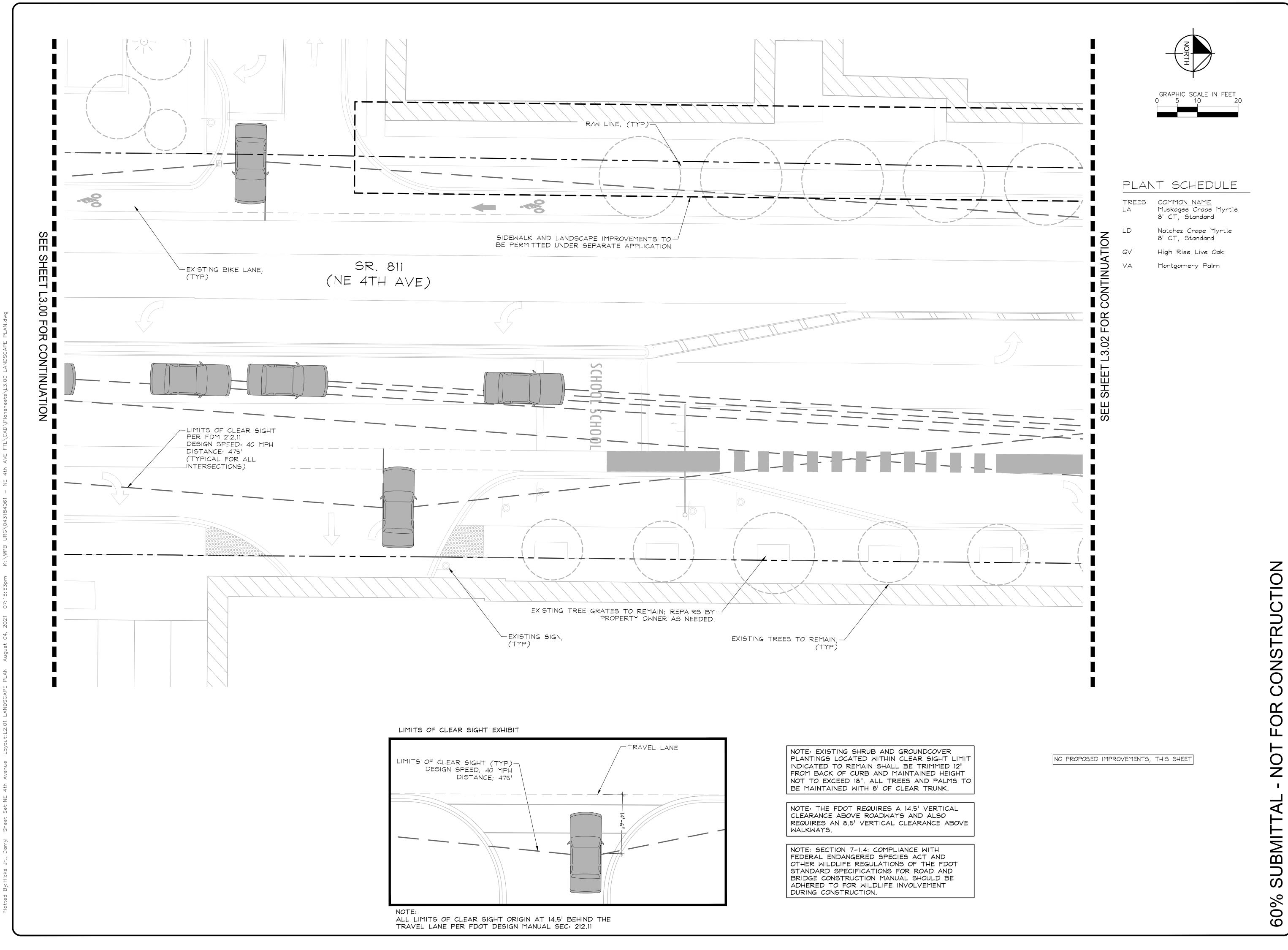
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PROJECT 3TH ST

SCAPE NE 10 FL PROJECT # 12557
NE 4TH AVENUE STREETSC,
E SUNRISE BLVD TO N
FORT LAUDERDALE, F
LANDSCAPE PLAN



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PROJECT 3TH ST

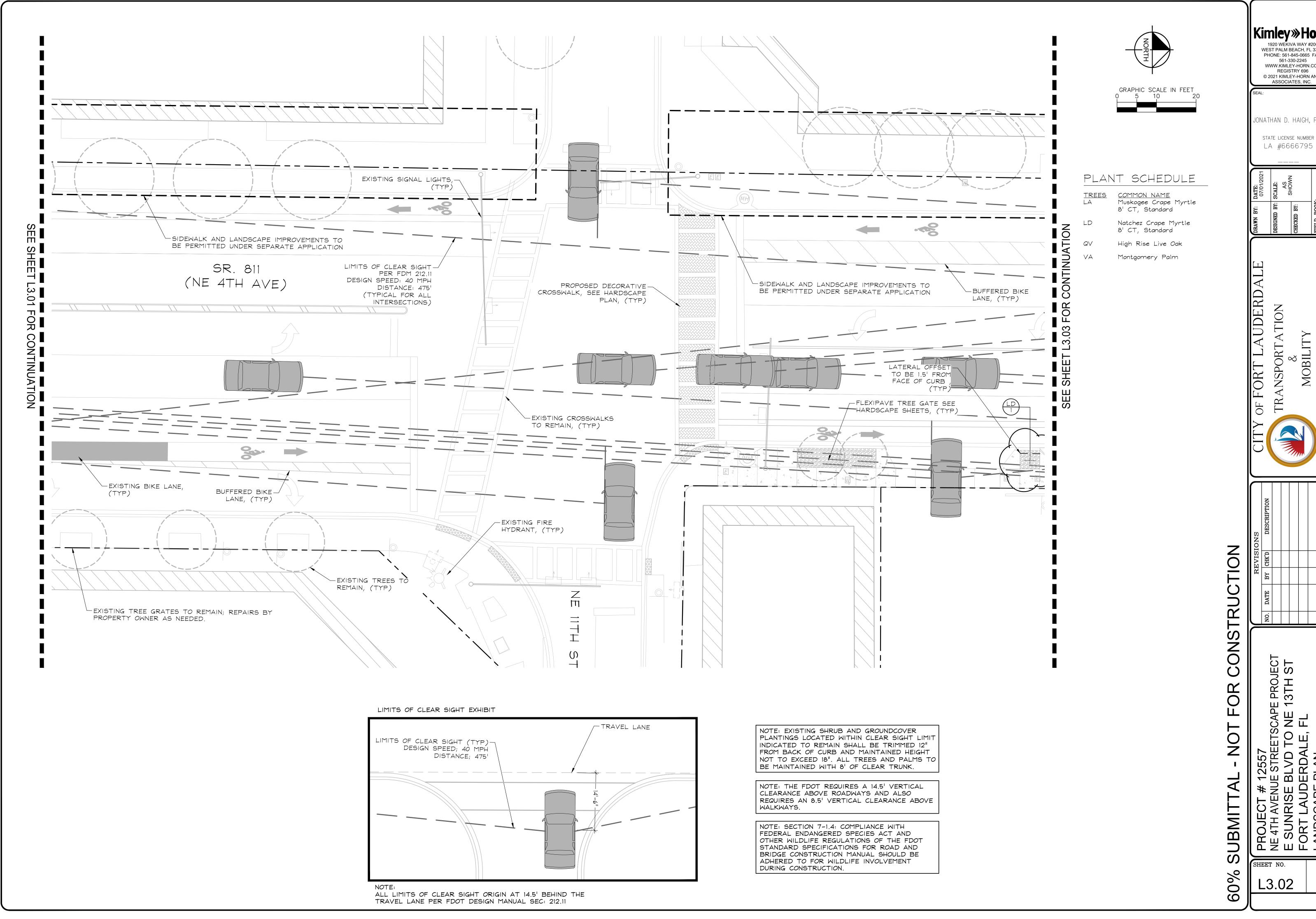
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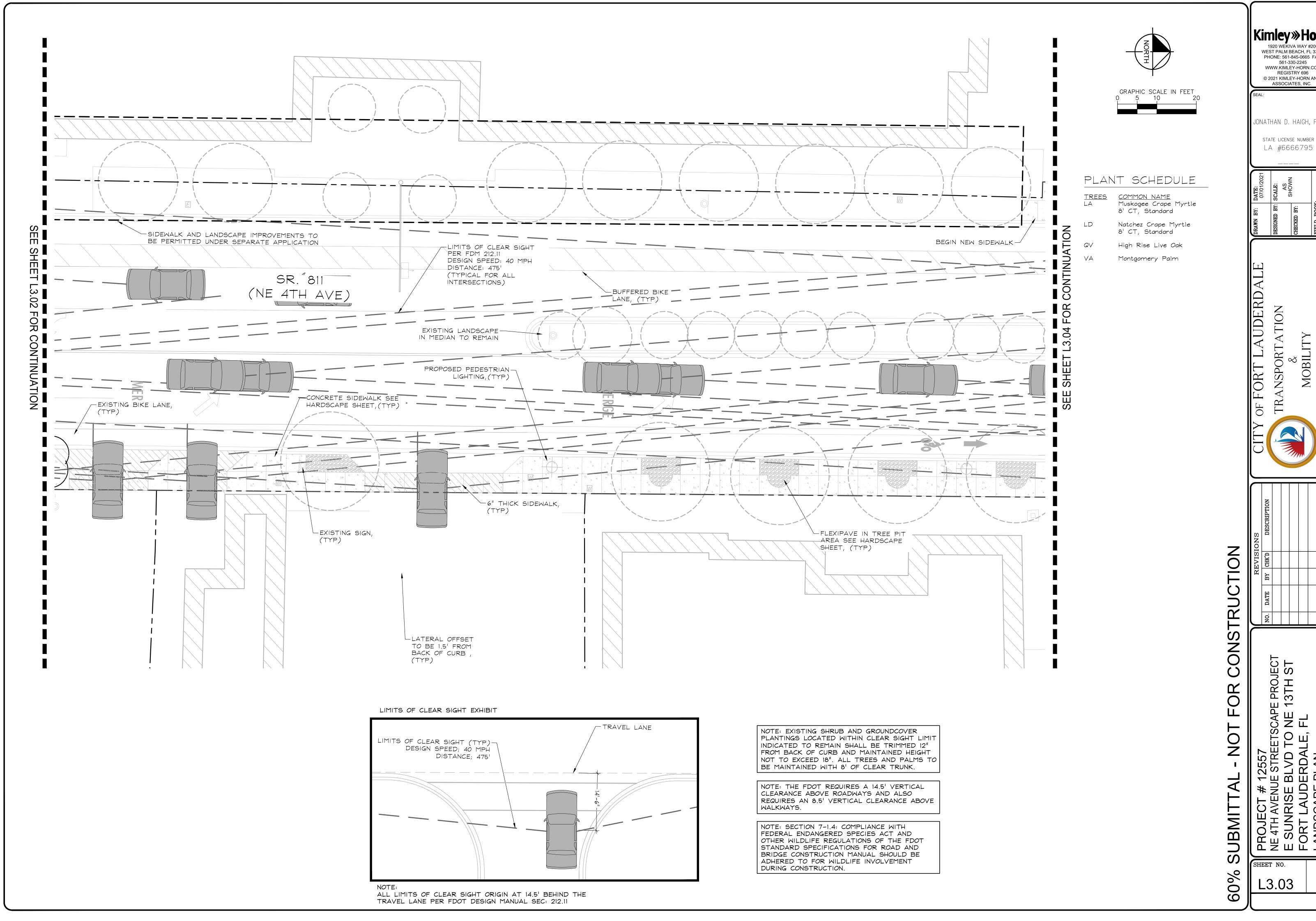
LANDSCAPE PLAN



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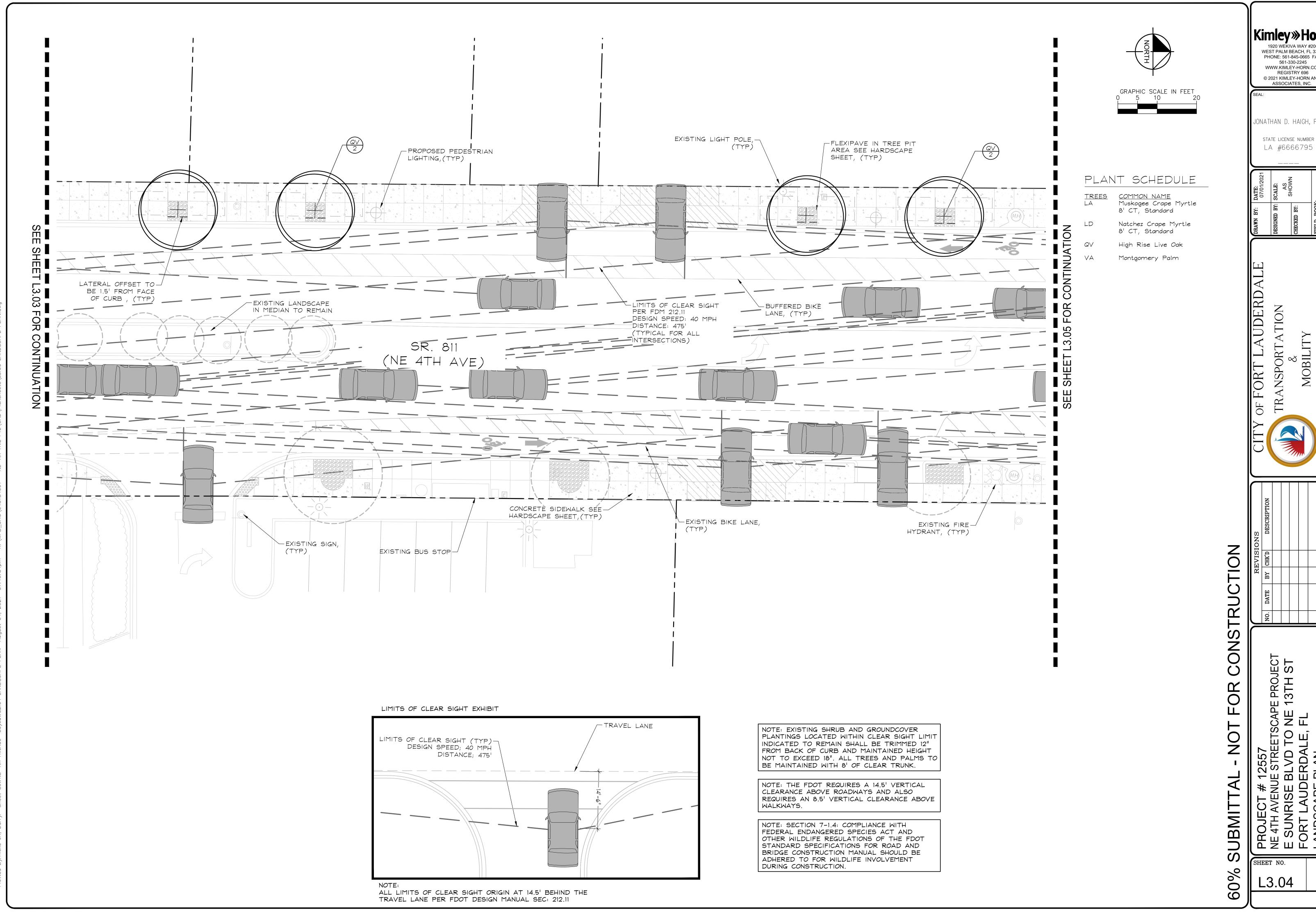
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SCAPE NE 10 FL PROJECT # 12557
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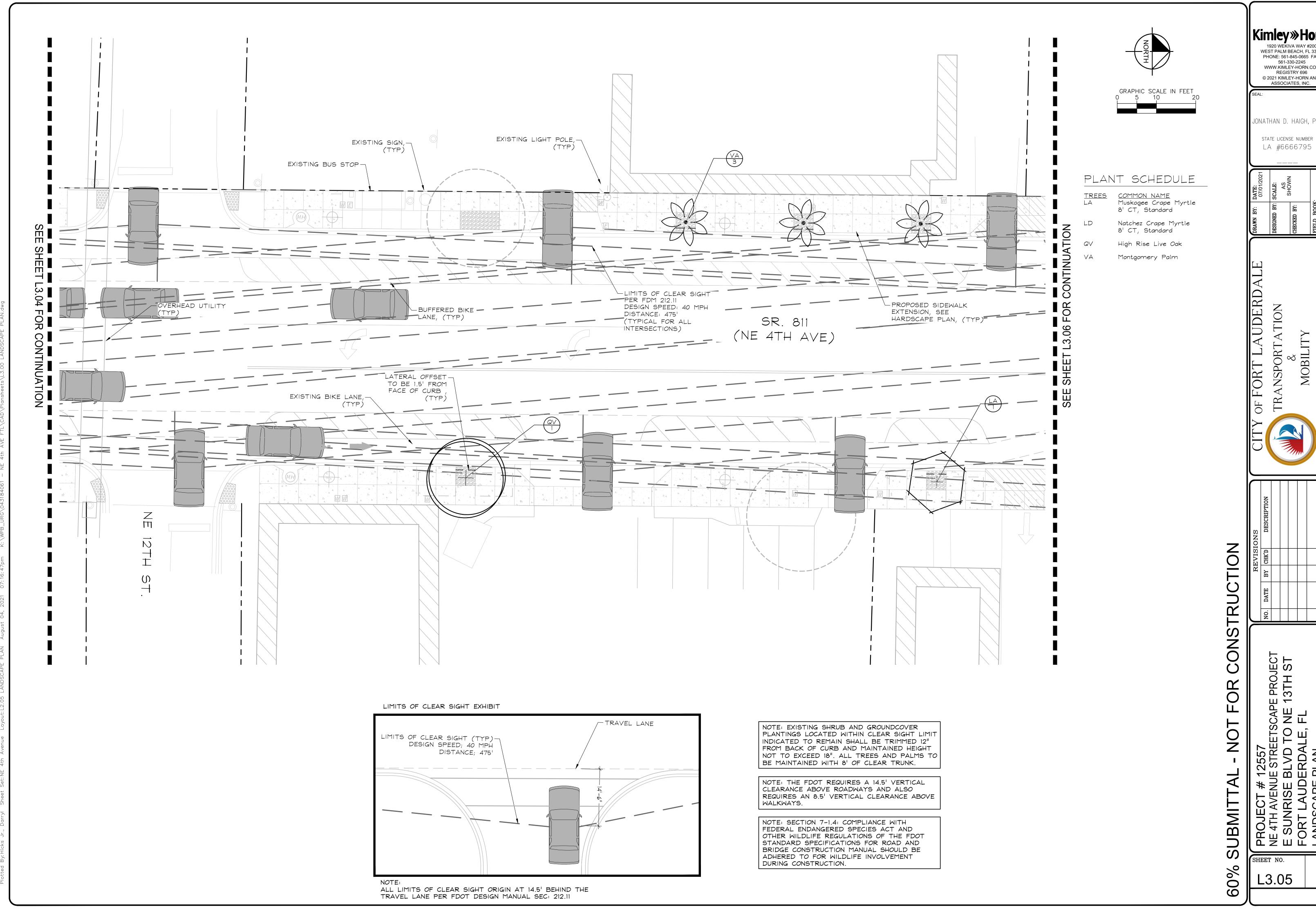
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PROJECT 3TH ST

PROJECT # 12557

NE 4TH AVENUE STREETSCAPE P
E SUNRISE BLVD TO NE 13
FORT LAUDERDALE, FL
LANDSCAPE PLAN



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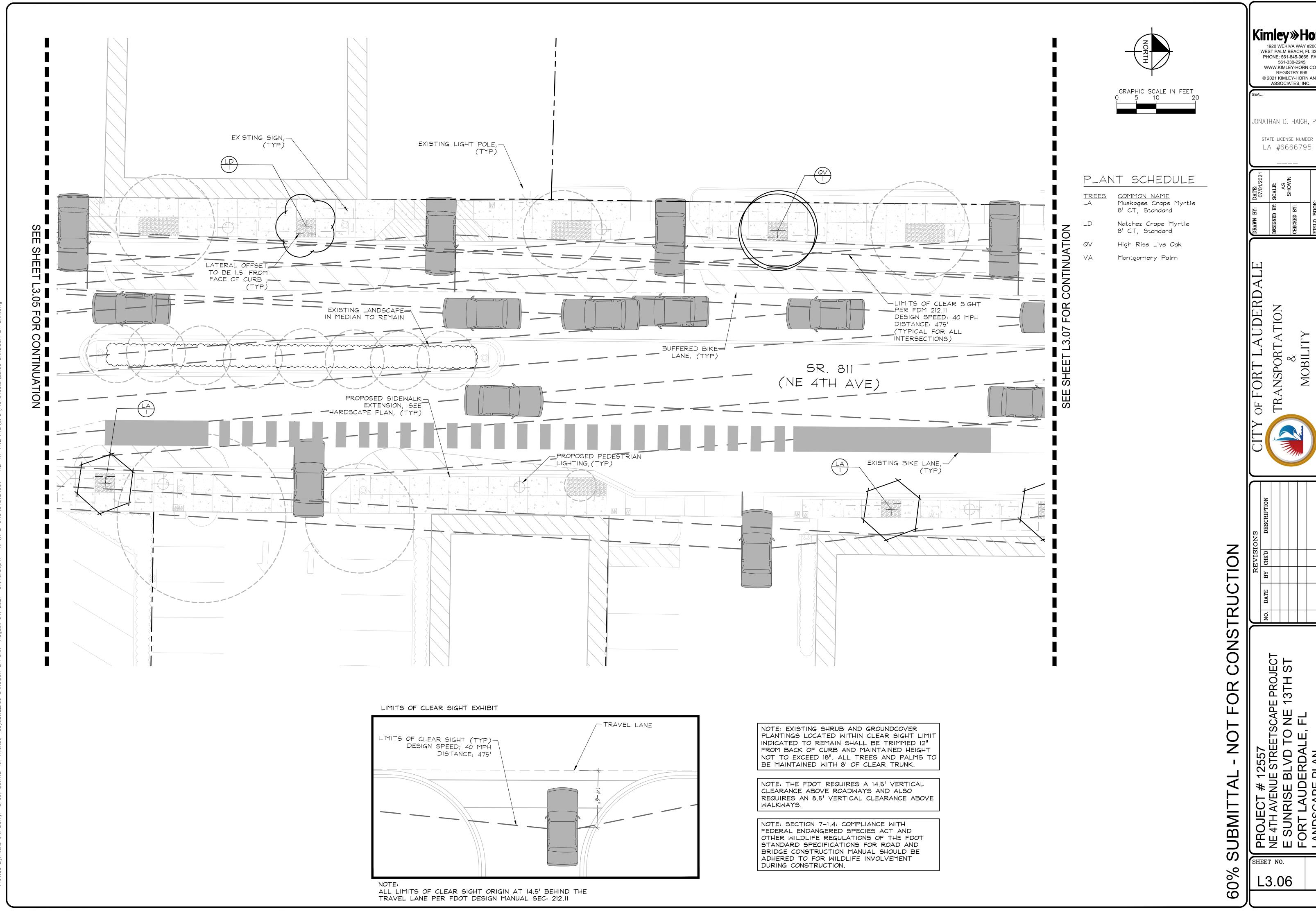
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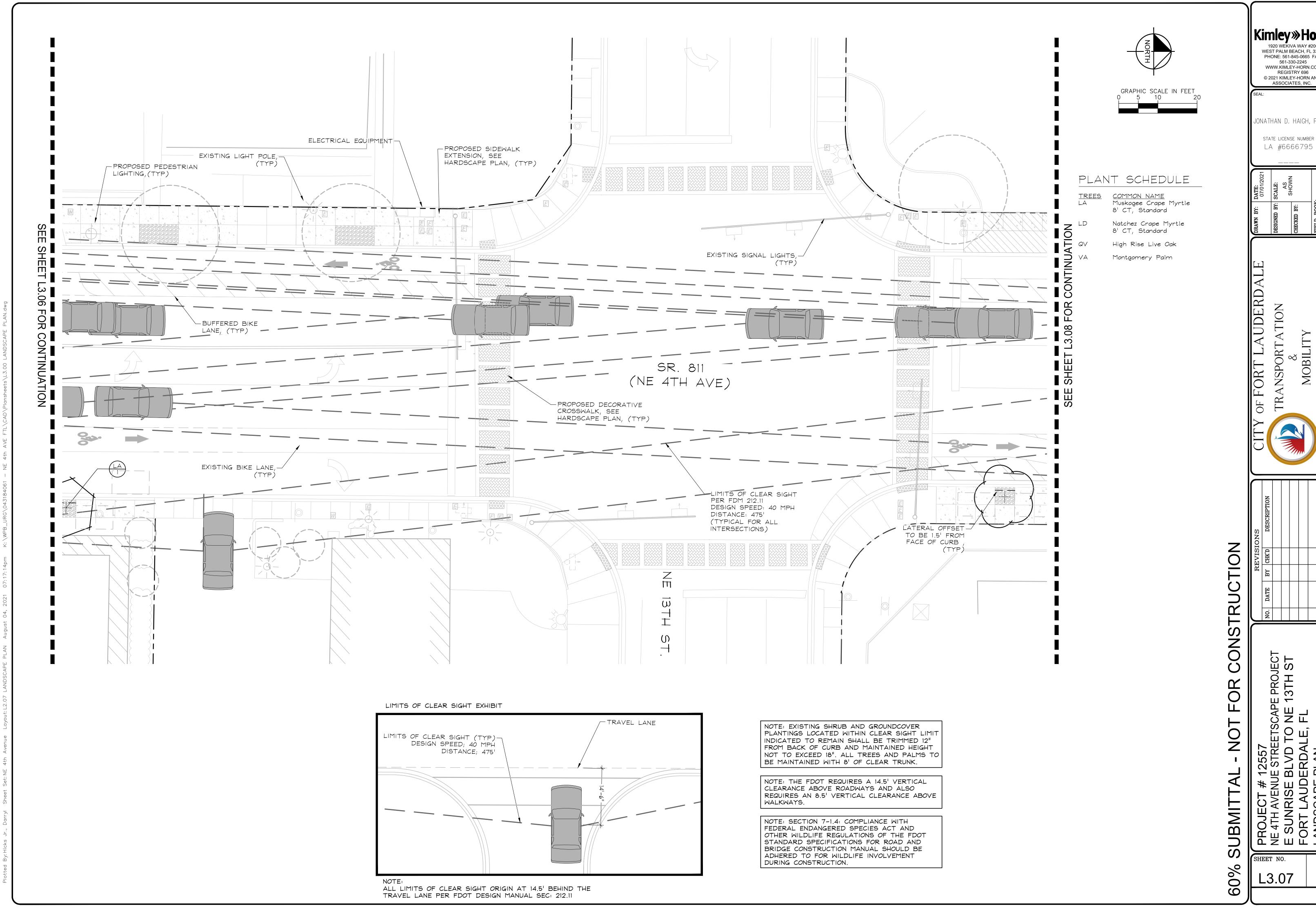
LANDSCAPE PLAN SHEET NO.



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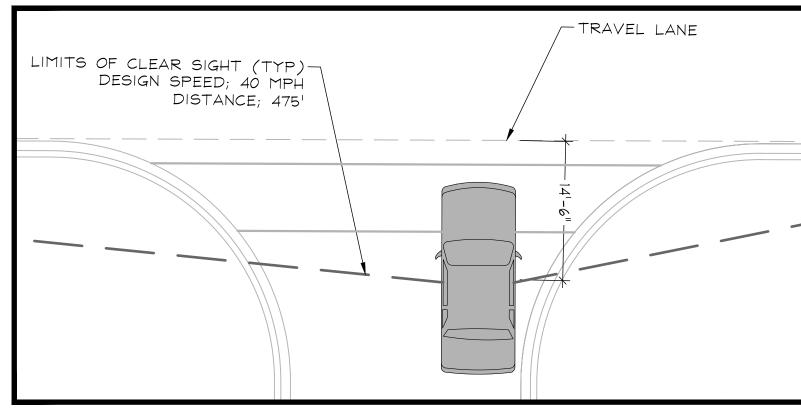
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PROJECT 3TH ST SCAPE NE 10 FL PROJECT # 12557
NE 4TH AVENUE STREETSC,
E SUNRISE BLVD TO N
FORT LAUDERDALE, F
LANDSCAPE PLAN

SHEET NO.

LIMITS OF CLEAR SIGHT EXHIBIT



ALL LIMITS OF CLEAR SIGHT ORIGIN AT 14.5' BEHIND THE TRAVEL LANE PER FDOT DESIGN MANUAL SEC: 212.11

NOTE: EXISTING SHRUB AND GROUNDCOVER PLANTINGS LOCATED WITHIN CLEAR SIGHT LIMIT INDICATED TO REMAIN SHALL BE TRIMMED 12" FROM BACK OF CURB AND MAINTAINED HEIGHT NOT TO EXCEED 18". ALL TREES AND PALMS TO BE MAINTAINED WITH 8' OF CLEAR TRUNK.

NOTE: THE FDOT REQUIRES A 14.5' VERTICAL CLEARANCE ABOVE ROADWAYS AND ALSO REQUIRES AN 8.5' VERTICAL CLEARANCE ABOVE WALKWAYS.

NOTE: SECTION 7-1.4: COMPLIANCE WITH FEDERAL ENDANGERED SPECIES ACT AND OTHER WILDLIFE REGULATIONS OF THE FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION MANUAL SHOULD BE ADHERED TO FOR WILDLIFE INVOLVEMENT DURING CONSTRUCTION.

PLANT SCHEDULE

<u>TREES</u> LA	<u>BOTANICAL NAME</u> Lagerstroemia 'Muskogee' 8' CT, Standard	<u>COMMON NAME</u> Muskogee Crape Myrtle	<u>CONT</u> Cont.	<u>CAL</u> 4" Cal.	<u>SIZE</u> 18' HT x 7' SPR	QTY 4
LD	Lagerstroemia 'Natchez' 8' CT, Standard	Natchez Crape Myrtle	Cont.	4" Cal.	18' HT x 7' SPR	6
QV	Quercus virginiana 'Hight Rise'	High Rise Live Oak	B # B / CONT.	4" Cal.	22' HT x 10' SPR	6
VA	Veitchia arecina	Montgomery Palm	F.G.		18' GW	3

FDOT GENERAL NOTES

- 1. CONTRACTOR SHALL ENSURE COMPLIANCE WITH THE CURRENT VERSION OF FDOT STANDARD SPECIFICATION AND PLANS.
- 1.1. GOVERNING STANDARD PLANS: FLORIDA DEPARTMENT OF TRANSPORTATION, FY 2020-2021 STANDARD PLANS FOR ROAD AND BRIDGE CONSTRUCTION AND APPLICABLE INTERIM REVISIONS (IRs). 1.2. GOVERNING STANDARD SPECIFICATIONS: FLORIDA DEPARTMENT OF TRANSPÓRTATION, JULY 2020 STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.
- 2. CONTRACTOR SHALL REPAIR ANY AND ALL DAMAGE DONE TO FDOT PROPERTY DURING DEMOLITION, RELOCATION AND/OR INSTALLATION ACTIVITIES AT HIS SOLE EXPENSE.
- 3. ARCHITECTURAL PAVERS INSTALLATION FOR SIDEWALKS AND/OR DRIVEWAYS WITHIN FDOT RIGHT OF WAY SHALL COMPLY WITH CURRENT FDOT STANDARD SPECIFICATION 526.
- 4. OWNERSHIP OF ALL SUITABLE EXCAVATED MATERIALS, AS DETERMINED BY THE DEPARTMENT, SHALL REMAIN IN THE DEPARTMENT UNTIL A FINAL ACCEPTANCE OF THE PERMITTED PROJECT IS FULFILLED. EXCAVATED MATERIALS SHALL BE HAULED BY THE PERMITTEE, AT THEIR COST # EXPENSE FROM THE SITE TO THE PALM BEACH OPERATIONS CENTER OR STOCKPILED IN THOSE AREAS AS DIRECTED BY THE DEPARTMENT, INCLUDING
- 5. CONTRACTOR SHALL COORDINATE ALL WORK WITH DISTRICT I OPERATIONS PERMITS DEPARTMENT USING FAX NUMBER (239)338-2353. COORDINATION WILL INCLUDE A PRE-CONSTRUCTION MEETING.
- 6. ALL MAINTENANCE OF TRAFFIC M.O.T. FOR THIS PROJECT WILL BE IN COMPLIANCE WITH THE DEPARTMENTS CURRENT EDITION OF THE DESIGN STANDARDS, (102-XXX SERIES) AND THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). THE OPERATIONS ENGINEER OR HIS DESIGNEE RESERVES THE RIGHT TO DIRECT THE REMOVAL/RELOCATION/MODIFICATION OF ANY TRAFFIC DEVICES(S) AT THE PERMITTEE'S SOLE EXPENSE. SPECIAL ATTENTION WILL BE GIVEN TO FDOT STANDARD PLANS 102-601, 102-602, 102-603, 102-604, AND 102-605
- 7. IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN FINAL ACCEPTANCE OF PERMITTED WORK (COMPLETED) AND THE RESTORATION OF THE RIGHT-OF-WAY FROM THE FDOT PRIOR TO USAGE.
- 8. CONTRACTOR SHALL RESTORE THE RIGHT OF WAY AS A MINIMUM, TO ITS ORIGINAL CONDITION OR BETTER IN ACCORDANCE WITH FDOT'S LATEST STANDARD SPECIFICATIONS FOR ROAD \$ BRIDGE CONSTRUCTION OR AS DIRECTED BY THE RESIDENT OPERATIONS ENGINEER.
- 9. REMOVAL/INSTALLATION OF SIDEWALK WILL BE IN ACCORDANCE WITH FDOT STANDARD INDEX 310.
- 10. RESTRICTED HOURS OF OPERATION FOR LANE CLOSURES WILL BE FROM 9:00AM TO 3:30 PM, (MONDAY-FRIDAY), UNLESS OTHERWISE APPROVED BY THE OPERATIONS ENGINEER, OR DESIGNEE.
- 11. PERMIT IS VALID FOR ONE YEAR FROM DATE OF ISSUE
- 12. PERMITTEE WILL PROVIDE THE FDOT WITH CERTIFIED 'AS-BUILT' PLANS PRIOR TO FINAL ACCEPTANCE OF THE PERMITTED WORK.

FDOT PLANTING NOTES

- FOR THE PORTION OF LANDSCAPE PLANT MATERIAL THAT WILL BE INSTALLED WITHIN THE FDOT RIGHT OF WAY LANDSCAPE INSTALLATION SHALL COMPLY WITH CURRENT FDOT MAINTENANCE SPECIFICATIONS 580-2.1. ONLINE REFERENCE: http://www.fdot.gov/programmanagement/maintenance/2018Jan/default.shtm.
- 2. FOR THE PORTION OF LANDSCAPE PLANT MATERIAL THAT WILL BE INSTALLED WITHIN THE FDOT RIGHT OF WAY REFER TO FDOT STANDARD PLANS INDEX 580-001 LANDSCAPE INSTALLATION. ONLINE REFERENCE: <u>HTTP://www.fDOT.GOV/DESIGN/STANDARDPLANS/CURRENT/IDX/580-001.PDF</u>
- 3. CYPRESS MULCH IS NOT PERMITTED ON FDOT RIGHT OF WAY. MULCH PERMITTED TO BE USED ARE HARDWOOD MULCH (CONTAINING NO CYPRESS PRODUCTS), RECYCLED MULCH OR APPROVED

EQUAL, CERTIFIED BY THE MULCH AND SOIL COUNCIL (MSC). SUBMIT PROOF OF CERTIFICATION TO THE FDOT DISTRICT OPERATIONS PERMIT LANDSCAPE INSPECTOR UPON INSPECTION.

- 4. SODDED AREAS WILL BE IN ACCORDANCE WITH STANDARD PLANS INDEX 570-010 AND STANDARD SPECIFICATIONS SECTIONS 162, 570, 981, 982, 983, 987 OF THE DEPARTMENT'S LATEST EDITION OF GOVERNING DESIGN STANDARDS AND STANDARD SPECIFICATIONS. ALL DISTURBED AREAS WILL BE SODDED WITHIN ONE (1) WEEK OF INSTALLATION OF SAID PERMITTED WORK.

(FDOT NOTES ONLY APPLY TO THOSE PLANTS, PAVERS, AND IRRIGATION INSTALLED WITHIN THE FDOT R/W)

PLANTING NOTES:

- CONTRACTOR SHALL REFER TO THE LANDSCAPE PLANTING DETAILS, PLANT LIST, GENERAL NOTES AND ALL CONTRACT DOCUMENTS FOR FURTHER AND COMPLETE INSTRUCTIONS.
- 2. PLANT LIST QUANTITIES ARE PROVIDED FOR CONVENIENCE. IN THE EVENT OF QUANTITY DISCREPANCIES THE DRAWING SHALL TAKE PRECEDENCE. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE LANDSCAPE ARCHITECT PRIOR TO BIDDING.
- 3. PLANT SIZES LISTED ARE THE MINIMUM SIZE THAT WILL BE ACCEPTED FOR THAT PLANT.
- 4. ANY SUBSTITUTION IN SIZE AND/OR PLANT MATERIAL MUST BE APPROVED BY THE LANDSCAPE ARCHITECT IN WRITING. ALL PLANTS WILL BE SUBJECT TO APPROVAL BY LANDSCAPE ARCHITECT AND/OR OWNERS REPRESENTATIVE BEFORE PLANTING CAN BEGIN.
- 5. CONTRACTOR SHALL FIELD ADJUST LOCATION OF PLANT MATERIAL AS NECESSARY TO AVOID DAMAGE TO EXISTING UNDERGROUND UTILITIES AND/OR INTERFERE WITH EXISTING ABOVE GROUND ELEMENTS. ALL CHANGES REQUIRED SHALL BE COMPLETED AT THE CONTRACTOR'S EXPENSE AND SHALL BE COORDINATED WITH THE OWNER'S REPRESENTATIVE AND THE LANDSCAPE ARCHITECT.
- THE CONTRACTOR SHALL BEAR ALL COSTS OF TESTING OF SOILS, AMENDMENTS, ETC. ASSOCIATED WITH THE WORK AND INCLUDED IN THE SPECIFICATIONS.
- CONTRACTOR SHALL FAMILIARIZE HIM/HERSELF WITH THE LIMITS OF WORK AND EXISTING CONDITIONS AND VERIFY ALL INFORMATION. IF DISCREPANCIES EXIST CONTRACTOR SHALL NOTIFY OWNER'S REPRESENTATIVE IN WRITING WITHIN SEVEN CALENDAR DAYS OF NOTICE TO PROCEED.
- 8. ALL NEW AND TRANSPLANTED PLANT MATERIAL SHALL BE IRRIGATED BY AN AUTOMATIC UNDERGROUND IRRIGATION SYSTEM.

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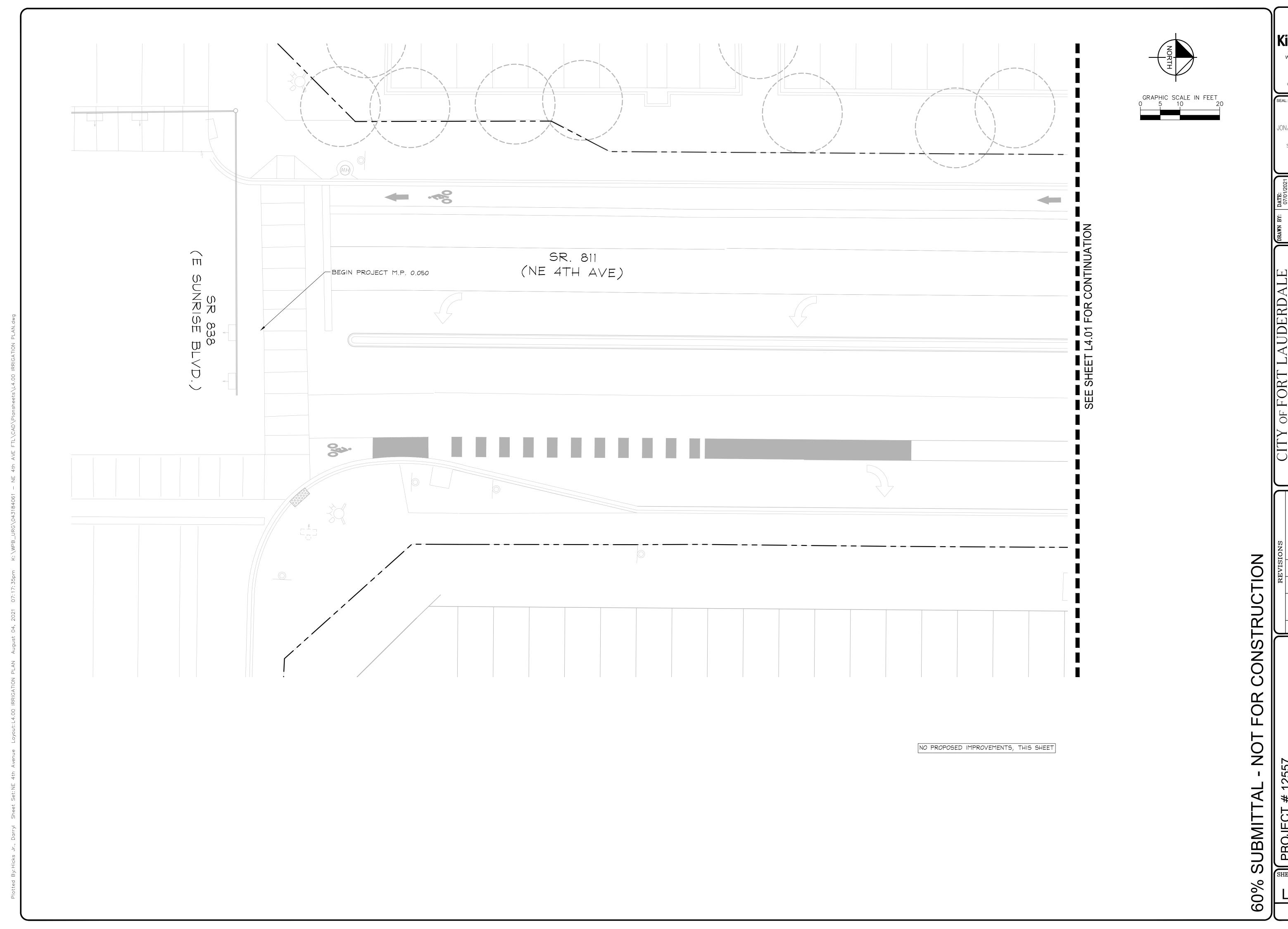
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SHEET NO.

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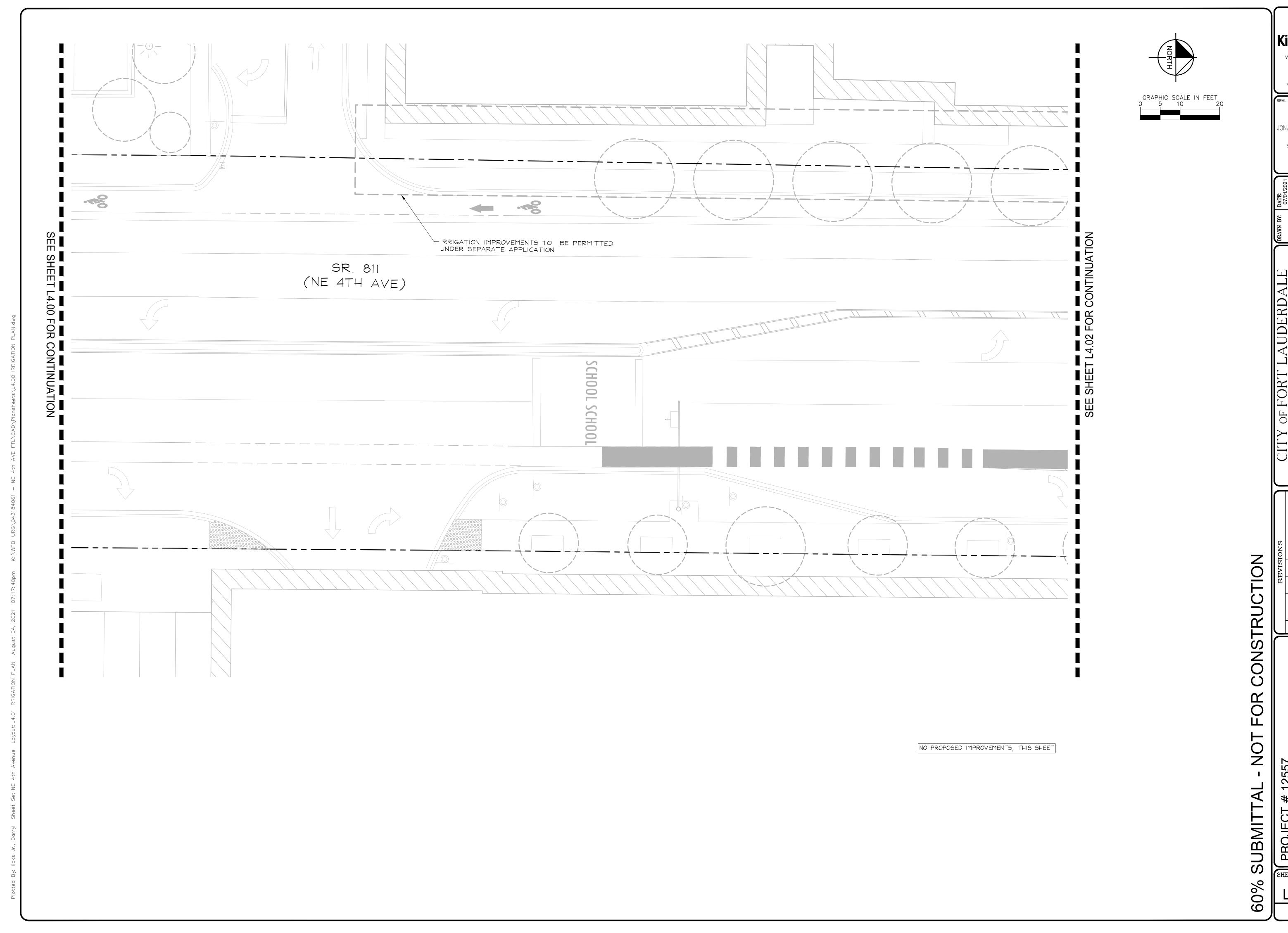
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IRRIGATION PLAN



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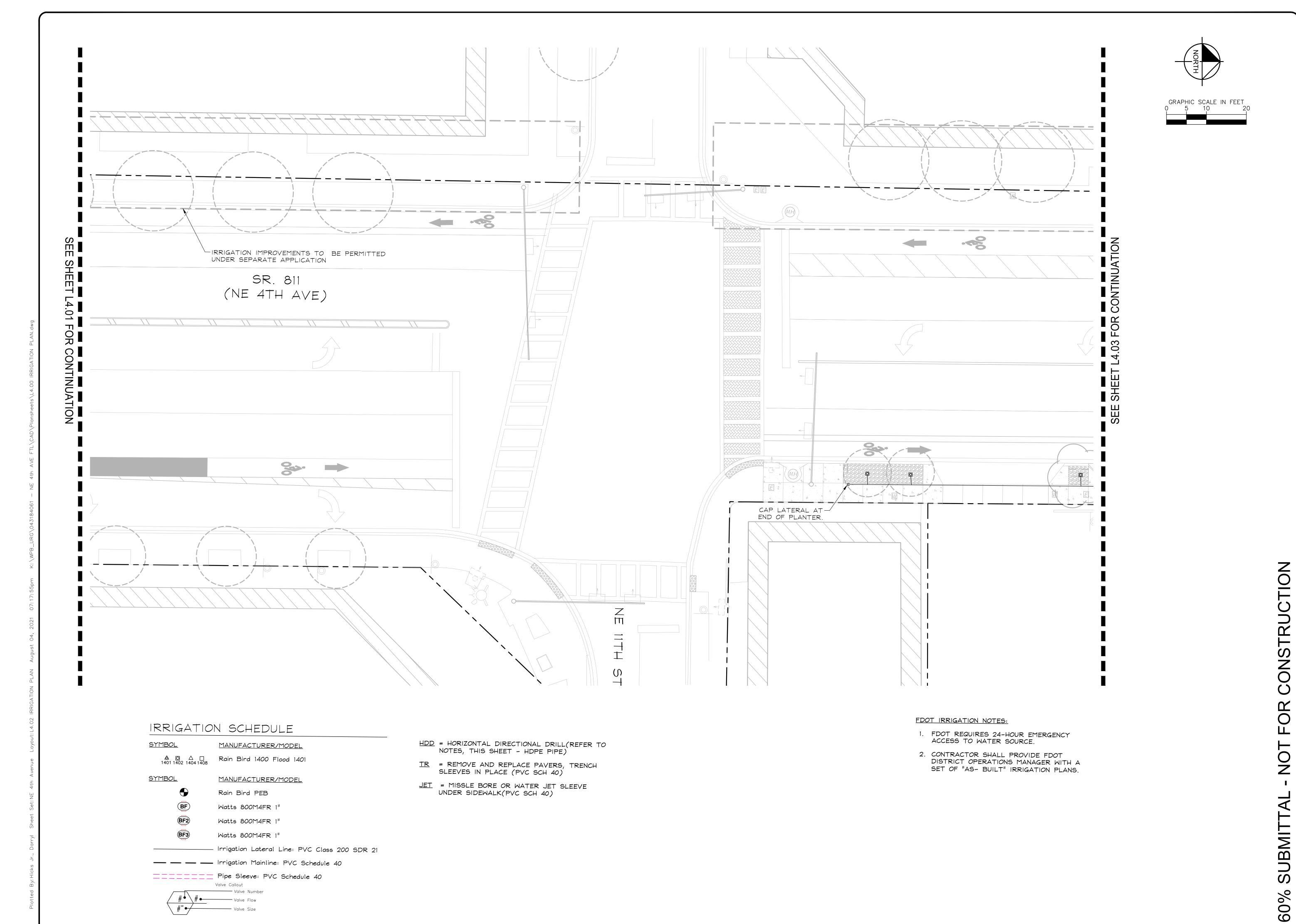
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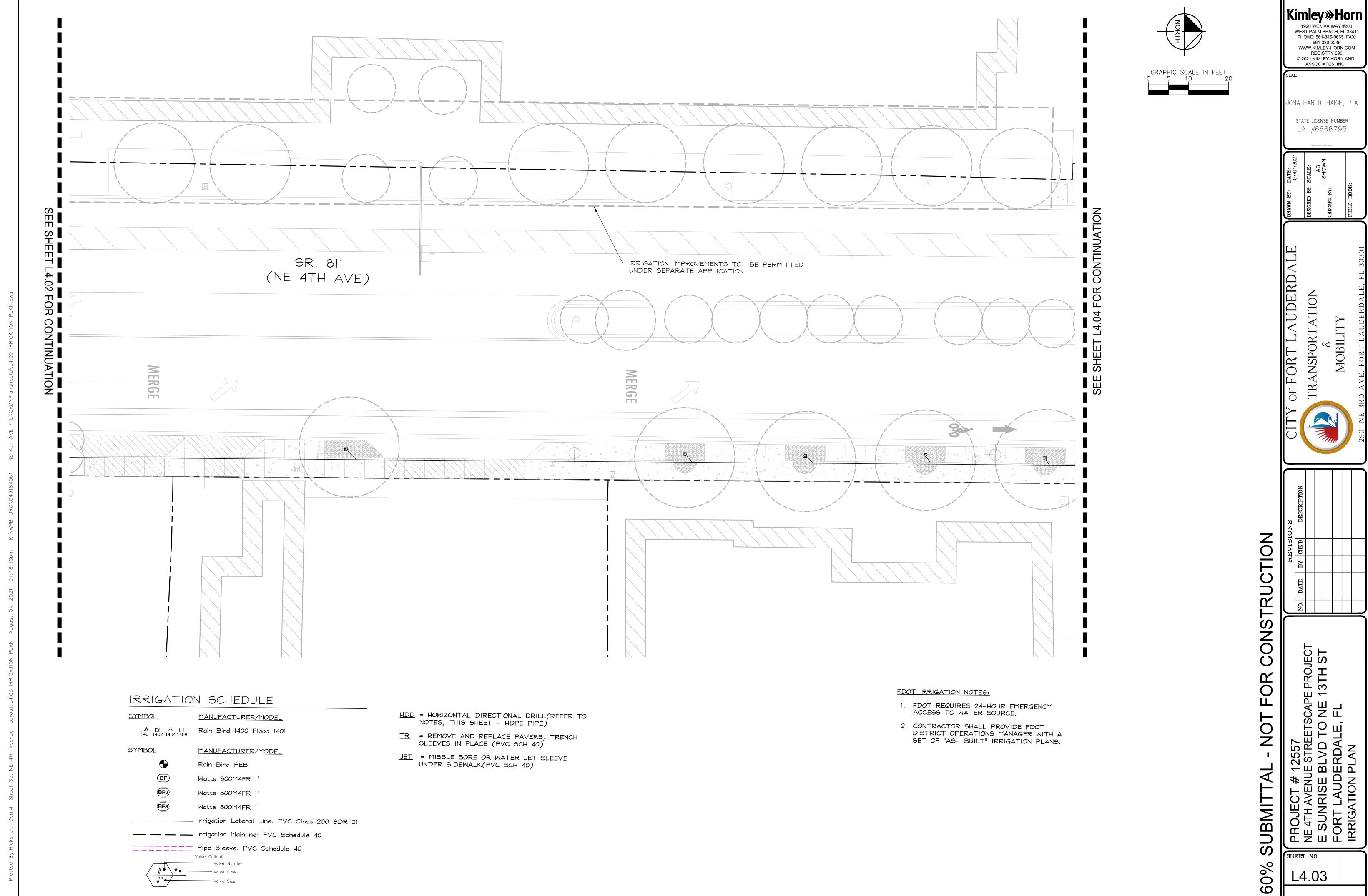
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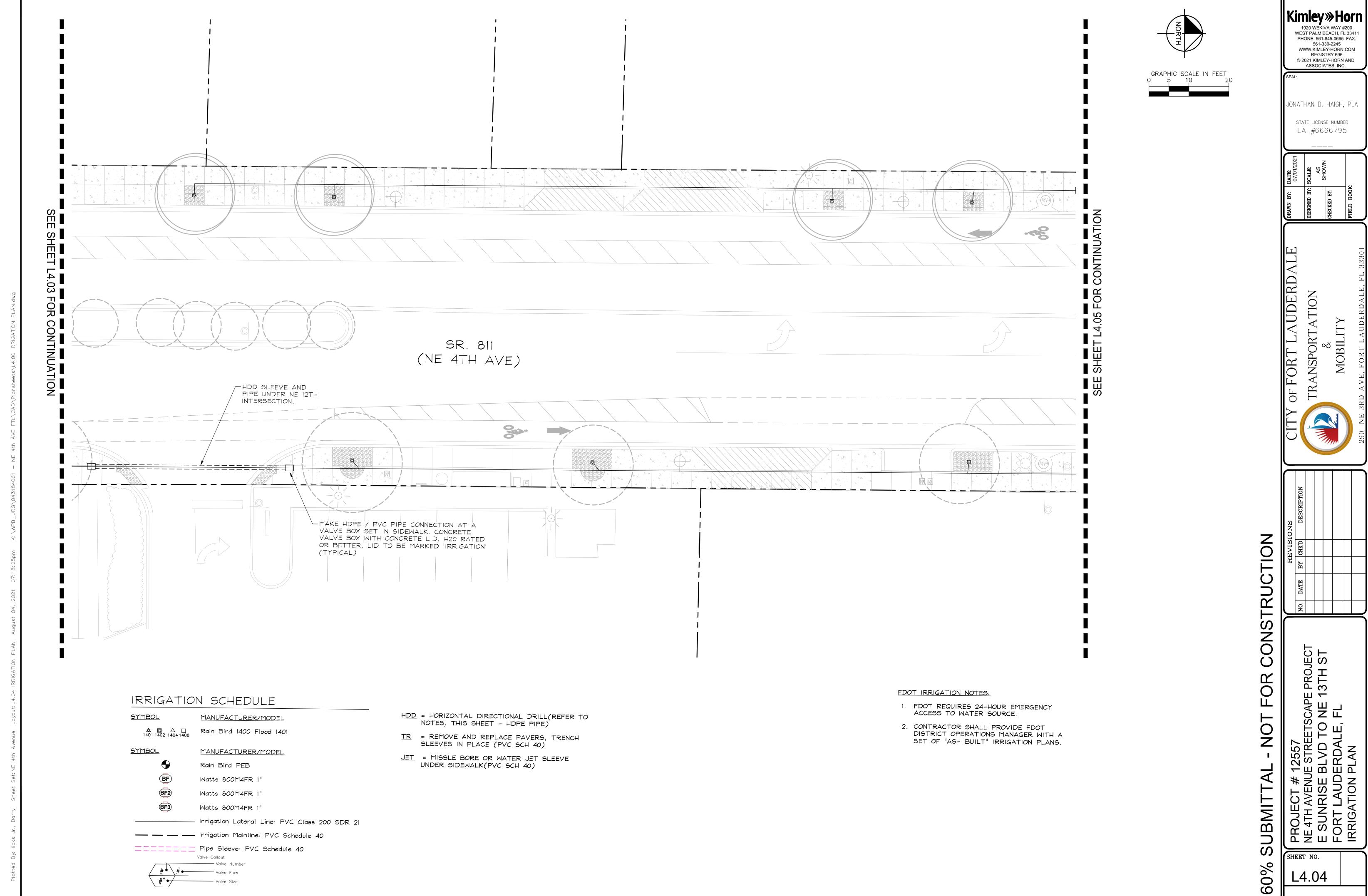
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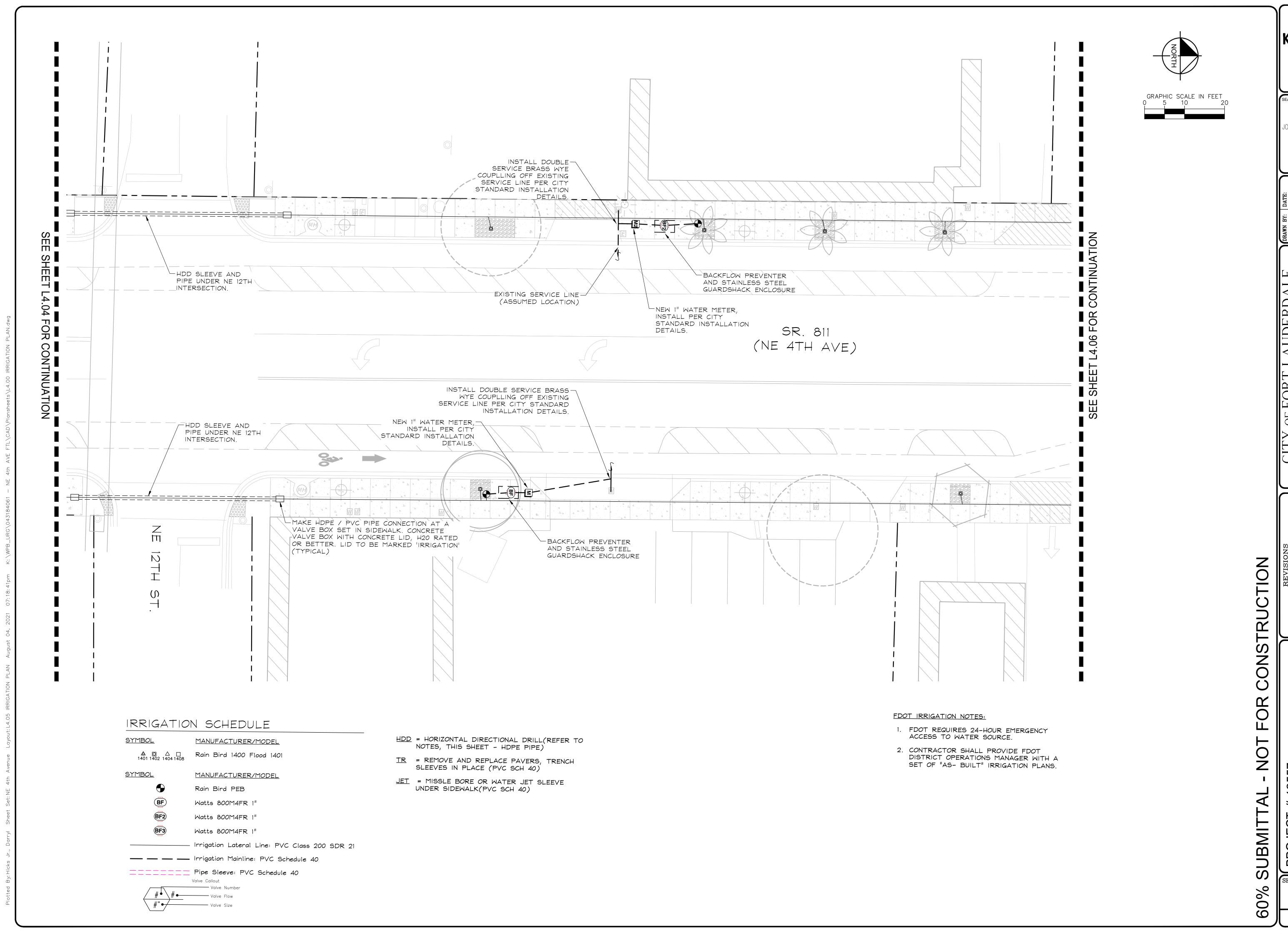
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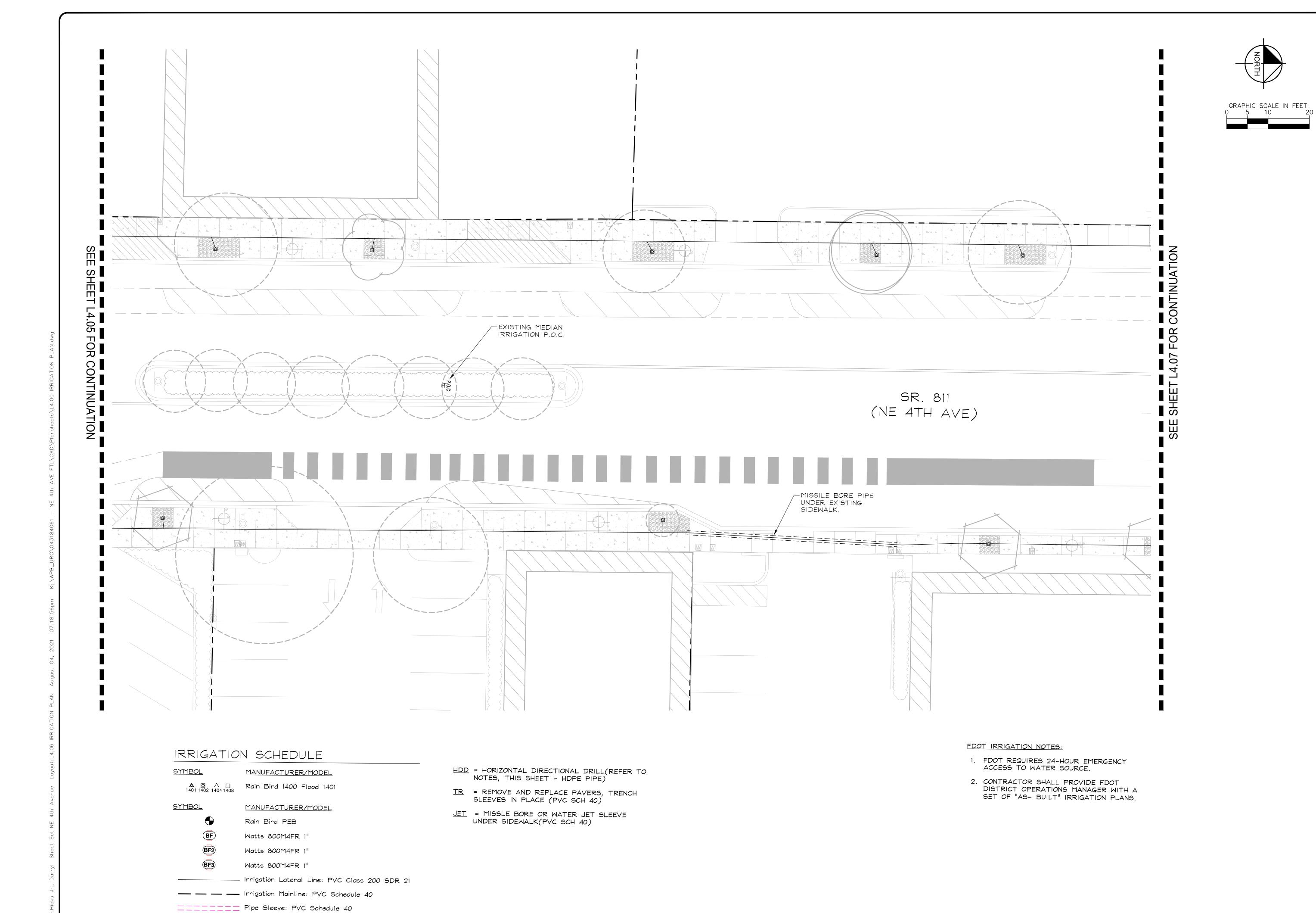
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NE 4TH AVENUE STREETSC
E SUNRISE BLVD TO N
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Valve Callout

— Valve Number

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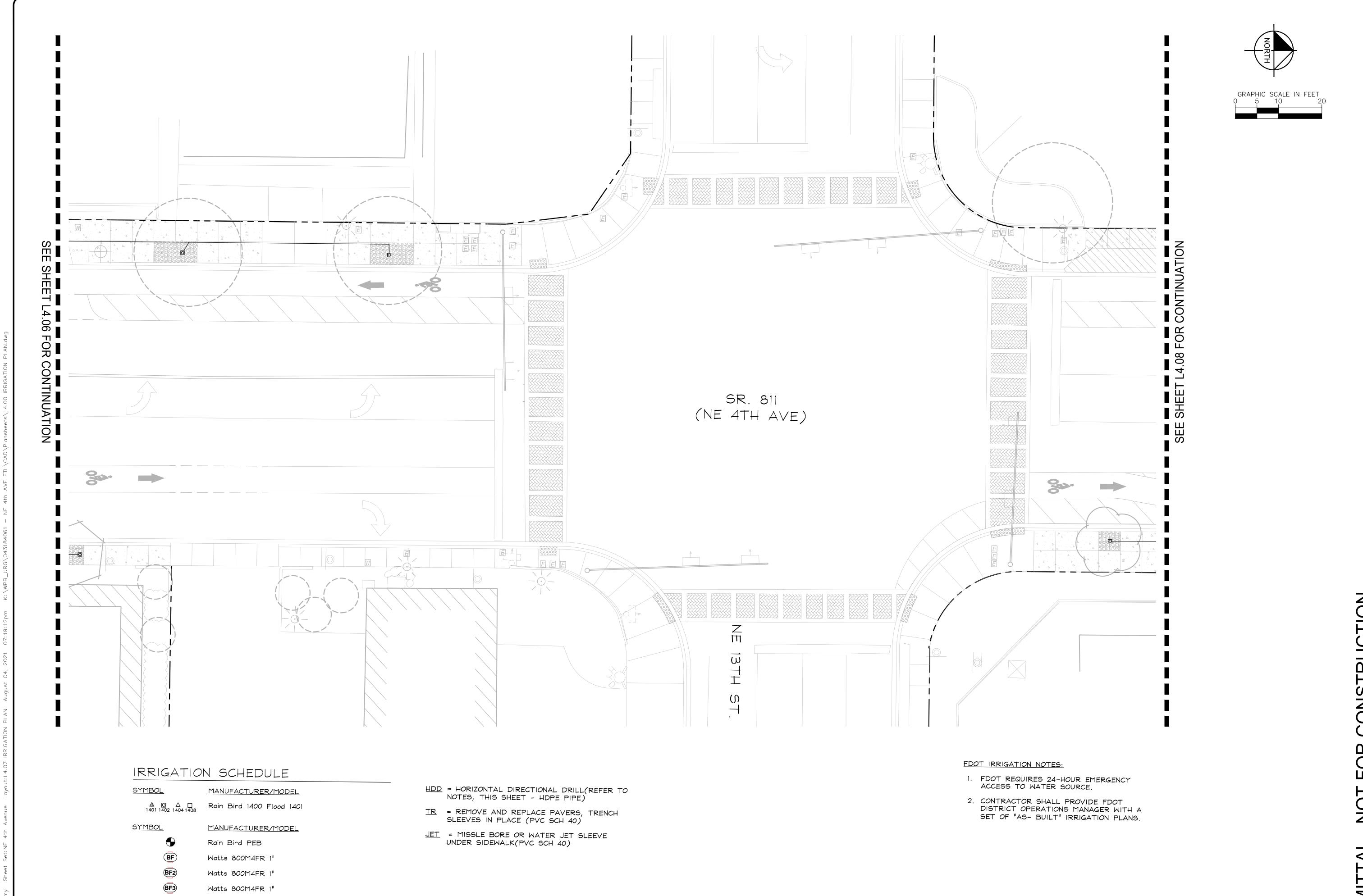
JONATHAN D. HAIGH, PLA

STATE LICENSE NUMBER LA #6666795

CONSTRUCTION

SUBMIT

%09



— Irrigation Lateral Line: PVC Class 200 SDR 21

— — — Irrigation Mainline: PVC Schedule 40

______ Pipe Sleeve: PVC Schedule 40

Valve Callout

60% SUBMITTAL - NOT FOR CONSTRUCTION

PROJECT # 12557

NE 4TH AVENUE STREETSC/
E SUNRISE BLVD TO N

Kimley » Horn

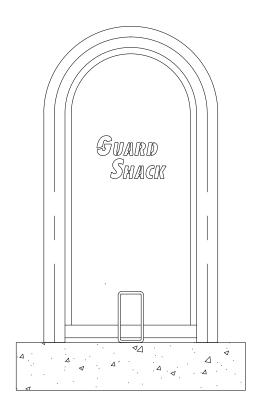
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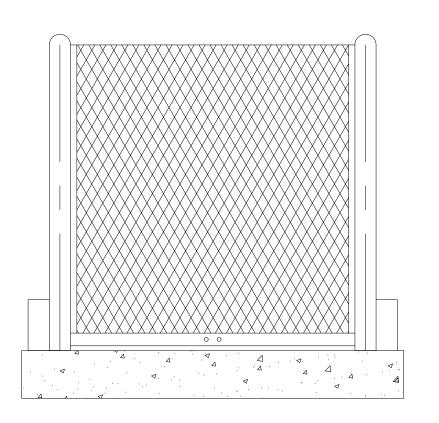
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SEE SHEET L4.07 FOR CONTINUATION HDD SLEEVE AND PIPE UNDER NE 4TH FROM PLANTER PIT TO PLANTER PIT END PROJECT M.P. 0.383 \$R. 811 (NE #4TH AVE) -NEW 1" WATER METER, INSTALL PER CITY STANDARD INSTALLATION DETAILS. -BACKFLOW PREVENTER AND STAINLESS STEEL GUARDSHACK ENCLOSURE -INSTALL DOUBLE SERVICE BRASS WYE COUPLLING OFF EXISTING SERVICE LINE PER CITY STANDARD INSTALLATION DETAILS.

STANDARD GUARDSHACK™ ENCLOSURES





GUARDSHACK™ GENERAL SPECIFICATIONS

- All pipe shall be 1 $\frac{1}{4}$ " schedule 40 A.S.T.M. A-53 Grade A-Electric Weld pipe.
- Angle Iron shall be 1" \times 1" \times $\frac{1}{8}$ " steel.
- Stainless steel units shall be 1 $\frac{1}{4}$ " schedule 10 A.S.T. M. A-312 304 S.S.
- \bullet Expanded metal shall be $\frac{1}{2}$ " spacing x # 13 Ga. flattened diamond $\frac{1}{1019}$ Woodlands Tan or TCI 8810-6058 Forest pattern steel.
- All stainless steel shall be sandblasted after fabrication to remove burrs, flashing and sharp edges.
- There shall be no exposed ends of expanded metal on the outside of the enclosure.
- \bullet Welding shall be a minimum of $\frac{1}{4}$ " long welds on 4" spacing.
- Standard Lock Shield Brackets shall be welded on each end of lift off enclosures.
- Hardware kits provided for mounting enclosures.
- On 304 S.S. units, all hinges, exposed hardware, and brackets shall be 304 S.S.
- All hardware shall be securely attached to enclosures. See HK−100 for hardware specifications.
- All enclosures shall withstand a minimum of 200 lbs. per square foot without any permanent deflection or distortion.
- 3/80 spacing between angle iron framework of enclosure and slab to prevent rusting. Only pipe ends to touch slab.

Pre-powdercoat Treatment Process Clean GuardShack™unit with a S-44 alkaline cleaner, overflow rinse, apply an AC-8115 iron phosphate treatment, overflow rinse and finish with a #198 sealer rinse to prevent rusting and improve adhesion.

POWDERCOATED UNITS

Powdercoat Treatment Process Units shall be preheated and coated by electrostatic application of 2.0 to 3.5 mil thickness on all surfaces. Powder shall be RAL Green or approved equal Impact Resistance Finish 160 inch pounds direct 160 inch pounds reverse, per ASTM D-2794 specs. Gloss Finish >85, per \dot{A} STM D-523. Adhesion to be rated excellent

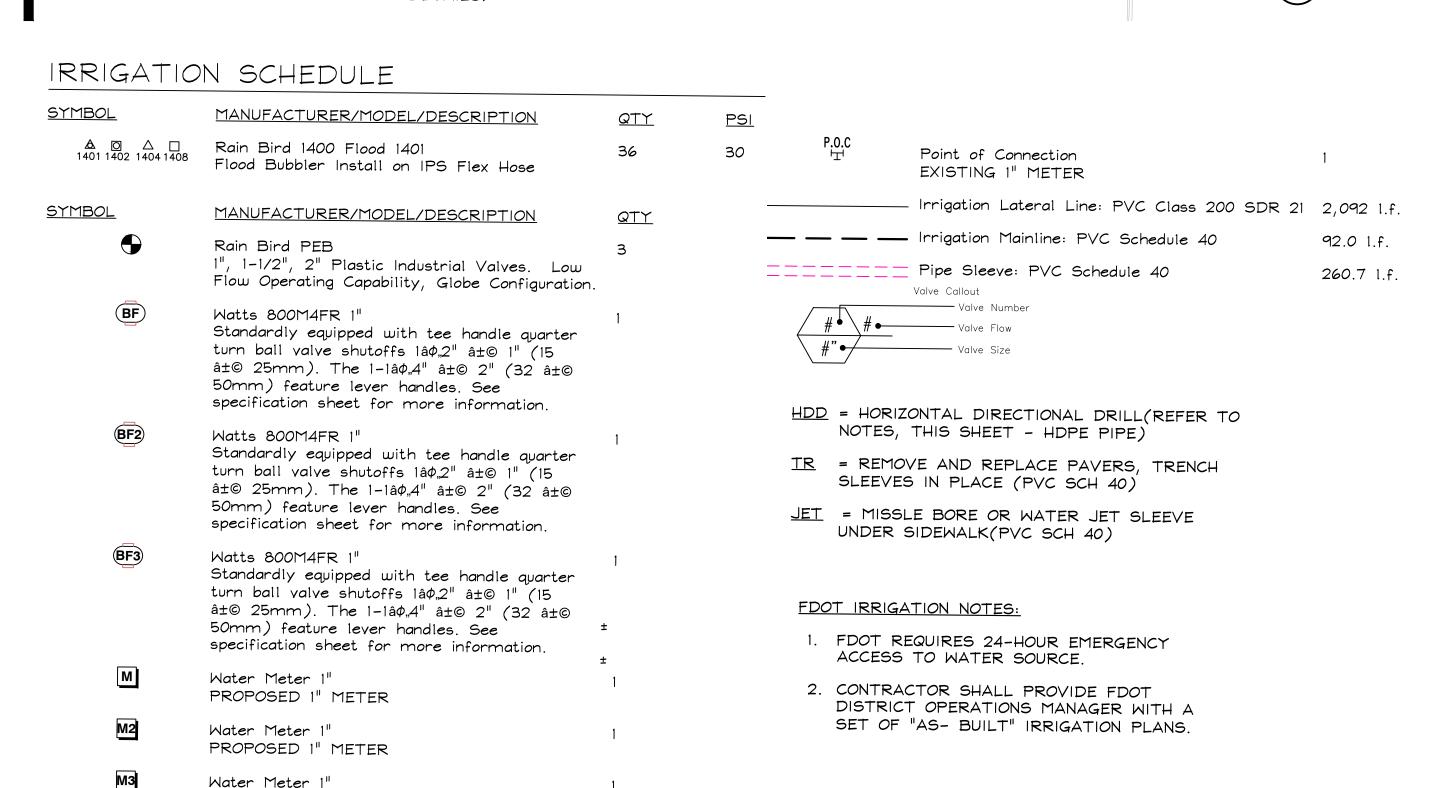
STAINLESS STEEL ELECTRO-POLISH FINISH

when tested to ASTM D-3359 standards.

All 304 Stainless Steel units shall be chemically electro-polished to impart a lustrous finish to the

Contractor to provide stainless steel Guardshack sized to fully enclose backflow prevented.

GUARDSHACK ENCLOSURE



PROPOSED I" METER

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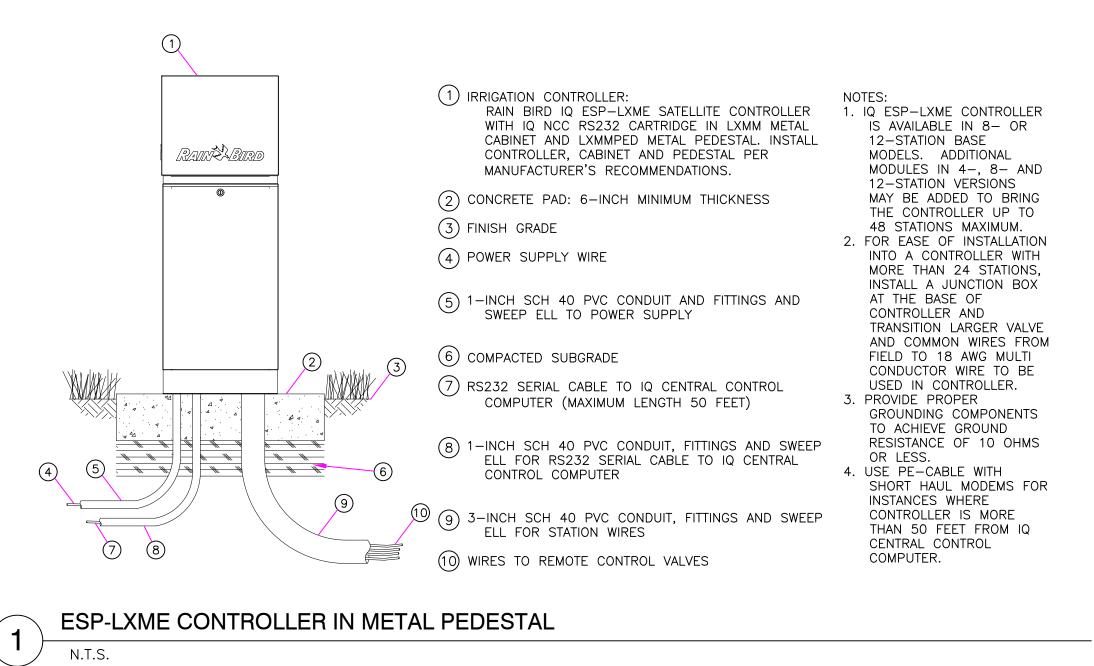
SUBMIT

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PROJE 3TH S

CAP NE FL TS Ö Ë, PROJECT # 12557
NE 4TH AVENUE STREE
E SUNRISE BLVD T
FORT LAUDERDAL

SHEET NO.



PVC SLIP-THREAD ADAPTER -BUBBLER NOZZLE AS SPECIFIED. WATER WELL AS PER PLANTING DETAIL. FINISHED GRADE ROOT BALL 1/2" IPS FLEX HOSE WITH PVC FLEX GLUE AND PRIMER. LENGTH AS REQUIRED. PCV LATERAL LINE. PVC SLIP-THREAD 2' MAX ADAPTER. 36"±

1. ALL SLEEVES TO EXTEND 2' BEYOND — 2"x4" WOOD STAKE BACK OF CURB ON EACH END. END OF SLEEVE. 2. NO 90° OR 45° COUPLINGS TO BE USED ON SLEEVES. 3. SLEEVES MUST BE STRAIGHT TO ALLOW PIPE TO BE INSERTED BY IRRIGATION - PAINT TOP 6" OF STAKE CONTRACTOR. W/FLOURESCENT ORANGE 4. SLEEVES NOT INSTALLED AT PROPER PAINT. DEPTH WILL BE REINSTALLED TO CONFORM TO DETAIL -WRITE OR PAINT "SLEEVE" 5. CONTRACTOR TO VERIFY SLEEVE ON STAKE INTEGRITY PRIOR TO FINAL PAVING. -WRAP END OF 16 GAUGE PULL WIRE AROUND STAKE AND THROUGH SLEEVE -CONC. CURB & GUTTER - PAVEMEN PLANTING MIX OR **TOPSOIL** TAPE OVER END OF SLEEVE W/DUCT TAPE. 16 GAUGE PULL WIRE -

IRRIGATION SLEEVING

BUBBLER ON FLEX HOSE RISER

HORIZONTAL DIRECTIONAL DRILL (HDD):

2. THE WORK CONSISTS OF FURNISHING AND INSTALLING UNDERGROUND IRRIGATION SLEEVING USING THE DIRECTIONAL BORING (HORIZONTAL DIRECTIONAL DRILLING, HDD) METHOD OF INSTALLATION. THIS WORK SHALL INCLUDE ALL SERVICES, EQUIPMENT, MATERIALS, AND LABOR FOR THE COMPLETE AND PROPER INSTALLATION, TESTING, RESTORATION OF UNDERGROUND UTILITIES AND ENVIRONMENTAL PROTECTION AND RESTORATION.

ON THE PLANS, BUT THE ENTRY AND EXIT LOCATIONS, AND MINIMUM CLEARANCES ARE NOT SHOWN ON THE PLANS. THE CONTRACTOR MAY UTILIZE AN ALTERNATIVE DRILL PATH THAN IS SHOWN ON THE DRAWINGS AT NO ADDITIONAL COST TO THE OWNER.

INSTALLATION. IF THE CONTRACTOR DETERMINES THAT A CASING PIPE IS NEEDED, THEN THE MATERIALS AND LABOR FOR INSTALLING THE STEEL CASING PIPE SHALL BE INCLUDED IN THE BASE BID LINE ITEM UNIT COST FOR THE HDD PIPELINE.

5. DIRECTIONAL DRILLING AND PIPE INSTALLATION SHALL BE DONE ONLY BY AN EXPERIENCED CONTRACTOR SPECIALIZING IN DIRECTIONAL DRILLING AND WHOSE KEY PERSONNEL HAVE AT LEAST FIVE (5) YEARS' EXPERIENCE IN THIS WORK. FURTHERMORE, THE CONTRACTOR SHALL HAVE INSTALLED DIRECTIONALLY DRILLED PIPE AT LEAST AS LARGE AS 12 INCHES IN DIAMETER, HAVE PERFORMED CROSSINGS AT LEAST 1,000 FEET IN LENGTH, AND SUCCESSFULLY INSTALLED AT LEAST 50,000 FEET IN LENGTH.

6. HIGH DENSITY POLYETHYLENE (HDPE) DRII PIPE SHALL BE USED IN HDD INSTALLATIONS

a.SPECIFICATIONS ON MATERIAL TO BE USED SHALL BE SUBMITTED TO ENGINEER. MATERIAL SHALL INCLUDE THE PIPE, FITTINGS AND ANY OTHER ITEM WHICH IS TO BE AN INSTALLED COMPONENT OF THE PROJECT b.PRIOR TO BEGINNING WORK, THE CONTRACTOR MUST SUBMIT TO THE ENGINEER A GENERAL WORK PLAN OUTLINING THE PROCEDURE AND SCHEDULE TO BE USED TO EXECUTE THE PROJECT. PLAN SHOULD DOCUMENT THE

c.CONTRACTOR SHALL MAINTAIN A PROJECT LOG OF BORING OPERATIONS AND A GUIDANCE SYSTEM LOG WITH A COPY GIVEN TO ENGINEER AT COMPLETION OF PROJECT. AS-BUILT DRAWINGS SHALL BE CERTIFIED AS TO ACCURACY BY CONTRACTOR.

8. CONTACTOR SHALL NOTIFY ALL COMPANIES WITH UNDERGROUND UTILITIES IN THE WORK AREA VIA THE "811" UTILITY LOCATE SERVICE TO OBTAIN UTILITY LOCATES. ONCE THE UTILITIES HAVE BEEN LOCATED CONTRACTOR SHALL PHYSICALLY IDENTIFY THE EXACT LOCATION OF THE UTILITIES BY VACCUUM OR HAND EXCAVATION, WHEN POSSIBLE, IN ORDER TO DETERMINE THE ACTUAL LOCATION AND PATH OF ANY UNDERGROUND UTILITIES WHICH MIGHT BE WITHIN 20 FEET OF THE BORE PATH. CONTRACTOR SHALL NOT COMMENCE BORING OPERATIONS UNTIL THE LOCATION OF ALL UNDERGROUND UTILITIES WITHIN THE WORK AREA HAVE BEEN VERIFIED.

THIS SHALL BE STATED IN WRITING TO THE ENGINEER NO LATER THAN THE PRE_CONSTRUCTION MEETING. 10. JOINING SHALL BE PERFORMED BY THERMAL BUTTFUSION. POLYETHYLENE PIPE LENGTHS TO BE JOINED BY THERMAL BUTT-FUSION SHALL BE OF THE SAME TYPE, GRADE, AND CLASS OF POLYETHYLENE COMPOUND. BUTT-FUSION

JOINING SHALL BE 100% EFFICIENT OFFERING A JOINT WELD STRENGTH EQUAL TO OR GREATER THAN THE TENSILE STRENGTH OF THE PIPE. 11. CONTRACTOR SHALL INSTALL LATERALS AND/OR MAINLINE WITHIN HDPE HDD SLEEVES PRIOR TO PULLBACK.

12. INSTALL TRACER WIRE, PER FDOT SPECIFICATIONS. 13. HORIZONTAL DIRECTIONAL DRILLING SHALL CONSIST OF THE DRILLING OF A SMALL DIAMETER PILOT HOLE FROM ONE END OF THE ALIGNMENT TO THE OTHER, FOLLOWED BY ENLARGING THE HOLE DIAMETER FOR THE PIPELINE INSERTION. THE EXACT METHOD AND TECHNIQUES FOR COMPLETING THE DIRECTIONALLY DRILLED INSTALLATION WILL BE DETERMINED BY THE CONTRACTOR, SUBJECT TO THE REQUIREMENTS OF THESE SPECIFICATIONS. 14. IF THE CONTRACTOR DETERMINES THAT A CASING PIPE IS NEEDED ON THE PIPE ENTRY/EXIT SIDE, THEN THE CASING PIPE SHALL BE INSTALLED PRIOR TO THE CONSTRUCTION OF THE PILOT BORE AND THE PILOT BORE SHALL BE

CONSTRUCTED TO ALIGN WITH THE CASING PIPE BELOW THE GROUND SURFACE. 15. THE ELEVATION OF THE SLEEVE AND/OR CARRIER PIPE AT THE LOCATION OF THE CONNECTION POINT OF THE DIRECTIONAL BORE SHALL BE 36" BELOW THE NATURAL GRADE AND SHALL BE IN A HORIZONTAL LOCATION FOR EASE OF CONNECTION TO CONTINUING LATERAL OR MAINLINE. SHOULD THIS NOT BE POSSIBLE DUE TO THE ACUTE ANGLE OF THE BORE, THE CONTRACTOR SHALL FURNISH AND INSTALL APPROPRIATE FITTINGS TO PROVIDE FOR A HORIZONTAL CONTINUATION.

16. CONTRACTOR MAY DETERMINE THAT A SEPARATE SLEEVE HINDERS INSTALLATION BETWEEN SMALLER HDD RUNS. CONTRACTOR MAY INSTALL HDPE WITHOUT SLEEVE IN CERTAIN AREAS, ONLY IF AGREED UPON BY THE ENGINEER AND CITY. ALL UN-SLEEVED PIPE SHALL BE PRESSURE TESTED AFTER COMPLETION OF THE JOINT FUSING AND BEFORE THE PIPE PULLBACK.

17. DURING THE DRILLING, REAMING, OR PULLBACK OPERATIONS, THE CONTRACTOR SHALL MAKE ADEQUATE PROVISIONS FOR HANDLING THE DRILLING FLUIDS, OR CUTTINGS AT THE ENTRY AND EXIT PITS. TO THE EXTENT PRACTICAL, THE CONTRACTOR SHALL MAINTAIN A CLOSED LOOP DRILLING FLUID SYSTEM. WHEN THE CONTRACTOR'S PROVISIONS FOR STORAGE OF THE FLUIDS OR CUTTINGS ON SITE ARE EXCEEDED, THESE MATERIALS SHALL BE HAULED AWAY TO A SUITABLE LEGAL DISPOSAL SITE. AFTER COMPLETION OF THE DIRECTIONAL DRILLING WORK, THE ENTRY AND EXIT PIT LOCATIONS SHALL BE PREPARED FOR LANDSCAPE INSTALLATION PER LANDSCAPE NOTES.

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NE 4TH AVENU
E SUNRISE
FORT LAUD S SHEET NO.

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NEST PALM BEACH, FL 33411

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LA #6666795

1. REFER TO FDOT SPECIFICATION SECTION 555. 3. THE PROPOSED PLAN INSTALLATION LOCATIONS ARE DIAGRAMMATIC; THE INTENT IS TO ACCOMMODATE THE IRRIGATION DESIGN AND TO AVOID EXISTING UTILITIES AND OBSTRUCTIONS. THE GENERAL HORIZONTAL LOCATION ARE SHOWN 4. THE CONTRACTOR SHALL DETERMINE IF A CASING PIPE IS NEEDED TO PREVENT FRAC-OUT OR UPHEAVAL, SETTLEMENT, CRACKING, MOVEMENT, OR DISTORTION OF THE SURFACE MATERIAL FOR ANY PORTION OF THE HDD THOUGHTFUL PLANNING REQUIRED TO SUCCESSFULLY COMPLETE THE PROJECT, DESCRIBING THE NOISE REDUCTION PROGRAM, SOLIDS CONTROL PLANT, PILOT HOLE DRILLING PROCEDURE, THE REAMING OPERATION, AND THE PULLBACK PROCEDURE. 9. THE CONTRACTOR IS REQUIRED TO BRING TO THE ATTENTION OF THE ENGINEER ANY KNOWN DESIGN DISCREPANCIES WITH THESE SPECIFICATIONS AND THE ACTUAL DRILLING METHODS THAT THE CONTRACTOR WILL BE PERFORMING.

- A. The work covered by this specification shall include the furnishing of all labor, materials, tools and equipment necessary to perform and complete the installation of an automatic irrigation system as specified herein and as shown on the drawings and any incidental work not shown or specified which can reasonably be determined to be part of the work and necessary to provide a complete and functional system.
- B. The work covered by this specification also includes all permits, federal, state and local taxes and all other costs, both foreseeable and unforeseeable at the time of construction.
- C. No deviation from these specifications, the accompanying drawings, or agreement is authorized or shall be made without prior written authorization signed by the Owner or his duly appointed representative.
- 1.02 QUALITY ASSURANCE
- A. Installer Qualifications: A firm specializing in irrigation work with not less than five (5) years of experience in installing irrigation systems similar to those required for this project.
- B. Coordination: Coordinate and cooperate with other contractors to enable the work to proceed as rapidly and efficiently as possible.
- C. Inspection of Site: The Contractor shall acquaint himself with all site conditions, including underground utilities before construction is to begin. Contractor shall coordinate placement of underground materials with contractors previously working underground in the vicinity or those scheduled to do underground work in the vicinity. Contractor is responsible for minor adjustments in the layout of the work to accommodate existing facilities.
- D. Protection of Existing Plants and Site Conditions: The Contractor shall take necessary precautions to protect site conditions to remain. Should damages be incurred, this Contractor shall repair the damage to its original condition at his own expense. Any disruption, destruction, or disturbance of any existing plant, tree, shrub, or turf, or any structure shall be completely restored to the satisfaction of the Owner and his representatives, solely at the Contractor's expense.
- E. Protection of Work and Property: The Contractor shall be liable for and shall take the following actions as required with regard to damage to any of the Owner's property.
- 1. Any existing building, equipment, piping, pipe coverings, electrical systems, sewers, sidewalks, roads, grounds, landscaping or structure of any kind (including without limitation, damage from leaks in the piping system being installed or having been installed by Contractor) damaged by the Contractor, or by his agents, employees, or subcontractors, during the course of his work, whether through negligence or otherwise, shall be replaced or repaired by Contractor at his own expense in a manner satisfactory to Owner, which repair or replacement shall be a condition precedent to Owner's obligation to make final payment under the Contract.
- 2. Contractor shall also be responsible for damage to any work covered by these specifications before final acceptance of the work. He shall securely cover all openings into the systems and cover all apparatus, equipment and appliances, both before and after being set in place to prevent obstructions on the pipes and the breakage, misuse or disfigurement of the apparatus, equipment or appliance.
- 3. All trenching or other work under the leaf canopy of any and all trees shall be done by hand or by other methods so that no branches are damaged in any way.

Buildings, walks, walls, and other property shall be protected from damage. Open ditches left exposed shall be flagged and barricaded by the Contractor by approved means. The Contractor shall restore disturbed areas to their original condition.

4. The Contractor shall be responsible for requesting the proper utility company to stake the exact location of any underground lines including but not limited to electric, gas, telephone service, water, and cable.

The Contractor shall take whatever precautions are necessary to protect these underground lines from damage. In the event damage does occur, all damage shall be completely repaired to its original condition, at no additional cost to the Owner.

- 5. The Contractor shall request the Owner, in writing, to locate any private utilities (i.e., electrical service to outside lighting) before proceeding with any excavation. If, after such requests and necessary staking, private utilities which were not staked are encountered and damaged by the Contractor, they shall be repaired by the Owner at no cost to the Contractor. If the Contractor damages staked or located utilities, they shall be repaired at the Contractor's
- F. Codes and Inspections: The entire installation shall comply fully with all local and state laws and ordinances and with all established codes arrange for all necessary inspections and shall pay all fees and expenses in connection with same, as part of the work under this Contract. Upon completion of the work, he shall furnish to the "Owner" all inspection certificates customarily issued in connection with the class of work involved.
- G. The Contractor shall keep on his work, during its progress, a competent superintendent and any necessary assistants, all satisfactory to the Owner, or Owner's representative.
- H. The superintendent shall represent the Contractor in his absence and all directions given to him shall be as binding as if given to the Contractor.
- I. The Owner's Landscape Architect or designated individual shall have full authority to approve or reject work performed by the Contractor. The Owner's Authorized Representative shall also have full authority to make field changes that are deemed necessary.
- J. Final Acceptance: Final acceptance of the work may be obtained from the Owner upon the satisfactory completion of all work. Acceptance by the Landscape Architect and/or Owner in no way removes the Contractor of his responsibility to make further repairs, corrections and adjustments to eliminate any deficiencies which may later be discovered.
- K. Guarantee: All work shall be guaranteed for one year from date of final acceptance against all defects in material, equipment and workmanship to the satisfaction of the Owner. Repairs, if required, shall be done promptly at no cost to the Owner.
- 1. The guarantee shall also cover repair of damage to any part of the premises resulting from leaks or workmanship, to the satisfaction of the Owner. The Contractor shall not be responsible for work damaged by others. Repairs, if required, shall be done promptly. The guarantee shall state the name of the Owner, provide full quarantee terms, effective and termination date, name and license number of Contractor providing guarantee, address, and telephone number. It shall be signed by the chief executive of the Contractor of his liability under the guarantee. Such warranties shall only supplement the guarantee.
- 2. If, within ten (10) days after mailing of written notice by the Owner to the Contractor requesting repairs or replacement resulting from a breach of warranty, the Contractor shall neglect to make or undertake with due diligence to make the same, the Owner may make such repairs at the Contractor's expense; provided, however, that in the case of emergency where, in the judgment of the Owner, delay would cause serious loss or damage, repairs or replacement may be made without notice being sent to the Contractor, and Contractor shall pay the cost thereof.

- L. The Contractor shall provide full, 100% irrigation coverage in all areas designed with proposed plantings, in accordance with the site's governing permitting requirements and as designed.
- M. On-site Observation: At any time during the installation of the irrigation system by the Contractor, the Owner or Landscape Architect may visit the site to observe work underway. Upon request, the Contractor shall be required to uncover specified work as directed by the Owner or material, workmanship or method of installation not meet the standards specified herein, the Contractor shall replace the work at his own expense.
- N. Workmanship: All work shall be installed by qualified, skilled personnel, proficient in the trades required, in a neat, orderly, and responsible manner with recognized standards of workmanship. The Contractor shall have had considerable experience and demonstrated ability in the installation of sprinkler irrigation systems of this type.

1.04 SUBMITTALS

- All materials shall be those specified and/or approved by the Landscape Architect.
- A. Product Data: After the award of the Contract and prior to beginning work, the Contractor shall submit for approval by the Owner and Landscape Architect, two copies of the complete list of materials, manufacturer's technical data, and installation instructions which he proposes to
- B. Commence no work before approval of material list and descriptive material by the Landscape Architect.
- C. Record Drawings: The Contractor shall record on reproducibles, all changes that may be made during actual installation of the system. Provide controller sequencing and control valve locations.
- 1. Immediately upon installation of any piping, valves, wiring, sprinklers, etc., in locations other than shown on the original drawings or of sizes other than indicated, the Contractor shall clearly indicate such changes on a set of blueline prints. Records shall be made on a daily basis. All records shall be neat and subject to the approval of the Owner.
- 2. The Contractor shall also indicate on the record prints the location of all wire splices, original or due to repair, that are installed underground in a location other than the controller pedestal, remote control valve box, power source or connection to a valve-in-head sprinkler.
- 3. These drawings shall also serve as work progress sheets. The Contractor shall make neat and legible notations thereon daily as the work proceeds, showing the work as actually installed. These drawings shall be available at all times for review and shall be kept in a location designated by the Owner's Representative.
- 4. Progress payment request and record drawing information must be approved by Landscape Architect before payment is made.
- 5. If in the opinion of the Owner or his representative, the record drawing information is not being properly or promptly recorded, construction payment may be stopped until the proper information has been recorded and submitted.
- 6. Before the date of the final site observation and approval, the Contractor shall deliver one set (copies) of reproducible record drawing plans and notes to the Landscape Architect. Record drawing information shall be approved by the Landscape Architect prior to submittal to Owner for final payments, including retentions.
- D. Operations and Maintenance Manuals: The Contractor shall prepare and deliver to the Owner, or his designated representative within ten (10) calendar days prior to completion of construction, a hard cover binder with three rings containing the following information:
- 1. Index sheet stating the Contractor's address and business telephone number, list of equipment with name(2) and address(es) of local manufacturer's representative(s).
- 2. Catalog and parts sheets on every material and equipment installed under this Contract.
- 3. Complete operating and maintenance instruction on all major equipment. Include initial controller 2.08 SPRINKLER HEADS schedule and recommended schedule after establishment period.
- 4. Demonstrate to and provide the Owner's maintenance personnel with instructions for major equipment and show evidence in writing to the Owner, or his designated representative at the conclusion of the project that this service has been rendered.
- 105 EXPLANATION OF DRAWINGS
- A. Due to the scale of the drawings, it is not possible to indicate all offsets, fittings and sleeves which may be required. The Contractor shall carefully investigate the structural and finished conditions affecting all of the work and plan his work accordingly, furnishing such offsets, fittings and sleeves as may be required to meet such conditions.
- B. The drawings are generally diagrammatic and indicative of the work to be installed. The work shall be installed in such a manner as to avoid conflicts between irrigation systems, planting and architectural features. Deviations shall be brought to the Landscape Architects attention.
- C. All work called for a on the drawings by notes or details shall be furnished and installed whether or not specifically mentioned in the specifications.
- D. The Contractor shall not willfully install the irrigation system as shown on the drawings when it is obvious in the field that obstructions, grade differences or discrepancies in area dimensions exist that might not have been known in engineering. Such obstructions or differences should be brought to the attention of the Landscape Architect. In the event that notification is not performed, the Contractor shall assume full responsibility for any revision necessary.
- E. If, in the opinion of the Landscape Architect, the labor furnished by the Contractor is incompetent, unskilled, or unreliable, his equipment inadequate, improper or unsafe, or if the Contractor shall fail to continuously and diligently execute the construction, the Landscape Architect or Owner shall, in writing, instruct the Contractor to remove all such causes of noncompliance and the Contractor shall promptly comply.
- F. The Contractor shall be responsible for full and complete coverage of all irrigation areas. The Landscape Architect shall be notified of any necessary adjustments at no additional cost to the Owner. Any revisions to the irrigation system must be submitted and answered in written form, along with any change in Contract price. Layout may be modified, if necessary to obtain coverage. Spacing not to exceed 60% of the diameter.

PART II: PRODUCTS

2.01 MATERIALS

Material and equipment shall be supplied by the Contractor. No substitutions shall be allowed without the prior written approval of the Owner/Landscape Architect. The Contractor shall inspect all materials and equipment prior to installation, and defective materials shall be replaced with the proper materials and equipment. Those items used in the installation found to be defective, improperly installed or not as specified, shall be removed and the proper materials and equipment installed in the proper manner, as interpreted by the Owner/Landscape Architect. The Contractor shall remove all damaged and defective pipe and equipment from the site.

2.02 PIPING

- A. General Provisions: All materials throughout the system shall be new and in perfect condition unless otherwise directed by the Landscape Architect.
- B. Polyvinyl Chloride Pipe (PVC): (Where indicated on plan, use non-potable purple piping.)
- 1. Laterals: PVC shall conform to the requirements of ASTM Designation D 2241, Class 1120 or 1220. All lateral piping less than 3" in diameter shall be Class 200 SDR-21.
- 2. Main Line Under Pressure: PVC shall conform to the requirements of ASTM Designation D 2241, Class 1120 or 1220, Schedule 40 with belled end for solvent weld connection.
- 3. Pipe Markings: All PVC pipe shall bear the following markings:
 - o Manufacturer's Name
 - o Nominal Pipe Size o Schedule or Class
 - o Pressure Ratina of PSI

 - o NSF (National Sanitation Foundation) Approval
 - o Date of Extrusion

2.04 PVC JOINTS

Joints in PVC pipe smaller than 3" shall be solvent welded in accordance with the recommendations of the pipe manufacturer; the solvent cleaner and welding compound furnished with the pipe.

- 2.05 THREADED CONNECTIONS
- A. Threaded PVC connections shall be made up using Teflon tape only.
- B. Connection between mainline pipe fittings and automatic or manual control valves shall be made using Schedule 80 threaded fittings and nipples.

2.06 SOLVENT CEMENT

- A. General: Provide solvent cement and primer for PVC solvent weld pipe and fittings recommended by the manufacturer. Pipe joints for solvent weld pipe to be belled end. Pipe joints for gasketted pipe to be intrical ring type. Insert gaskets will not be accepted.
- B. Thrust Blocks: Main line piping 3" or greater in diameter shall have thrust blocks sized and placed in accordance with the pipe manufacturer's recommendations or, in the absence of specified recommendations by the pipe manufacturer. 3000 PSI concrete thrusts shall be properly installed at tees, elbows, 45's, crosses, reducers, plugs, caps and valves.
- 2.07 PIPE AND WIRE SLEEVES
- A. Sleeves to be installed:
- 1. The Contractor shall install irrigation system pipe and wire sleeves conforming to the following:
 - a. All pipe sleeves shall extend a minimum of 36" beyond the edges of pavement.
 - b. All pipe sleeves to be installed beneath future/existing road surfaces shall be PVC pipe Schedule 40 or jack and bore steel pipe as per FDOT specifications, and as shown on plans.
 - c. All irrigation system wires shall be sleeved seperately from main or lateral lines.
 - d. All pipe sleeves shall be installed at the minimum depth specified for main lines, lateral lines, and electric wire.
 - e. Contractor shall coordinate all pipe sleeve locations and depths prior to initiating installation of the irrigation system.

A. Spray Sprinklers: The sprinkler shall be a fixed spray type designed for in-ground installation. The nozzle shall elevate 6" (or as designated on plan) when in operation. The body of the sprinkler shall be constructed of non-corrosive heavy duty Cycolac. A filter screen shall be in the nozzle piston. All sprinkler parts shall be removable through the tip of the unit by removal of a threaded cap.

Riser mounted spray shall be as indicated on the plans. The sprinkler shall consist of a nozzle and body. The body of the riser-mount sprinkler shall be constructed of non-corrosive materials. A cone strainer shall be a separate part with the nozzle assembly to allow for easy flushing of the sprinkler. Maximum working pressure at the base of the sprinkler shall be 40

(continued...)

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NE 4TH AVENUE STREE
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FORT LAUDERDAL
IRRIGATION NOTES

2.10 GATE VALVES

- A. Gate valves for 3/4" through 2-1/2" shall be of brass or bronze construction, solid wedge, IPS threads, non-rising stem with wheel operating handle, for a continuous working pressure of 150
- B. Gate valves for 3" and larger: Iron body, brass or bronze mounted AWWA gate valves, with a clear waterway equal to the full nominal diameter of the valve, rubber gasket for a continuous working pressure of 150p PSI. Valve shall be equipped with a square operating nut.

2.11 VALVE BOXES

- A. For gate valves, use AMETEK #10-181-014 box with #10-181-015 locking lid, or as per the drawings.
- B. For control valves 3/4" through 2", the drip valve assemblies, use AMETEK #10-181-014 box with #10-181-015 locking lid, or sized as necessary to effectively house the equipment
- C. For control wiring splices, use AMETEK #10-181-014 box with #10-181-015 locking lid, or as per the drawings.
- 2.12 IRRIGATION WIRING
- A. Wiring used for connecting the electric control valves to the controllers shall be Type UF, 600 volt. single strand, solid copper with PVC insulation 4/64" thick. Size shall be 14 gauge, red for "hot" or lead wires, and common wire to be 14 gauge, white in color.
- B. Contractor shall perform an ohm test on ground to assure adequate protection against surges and indirect lightning strikes.
- 2.13 MISCELLANEOUS MATERIALS
- A. Drainage Backfill: Cleaned gravel or crushed stone, graded from 1" maximum to 3/4" minimum.
- B. Metalized Underground Tape: The detectable, underground utility marking tape shall consist of a minimum: 5 mil (0.005") overall thickness; five-ply composition; ultra-high molecular weight 100% virgin polyethylene; acid, alkaline and corrosion resistant; with no less than 150 pounds of tensile break strength per 6" width; color-code impregnated with color stable, lead-free, organic pigments suitable for direct burial. Tapes utilizing reprocessed plastics or resins shall not be acceptable. The detectable, underground utility marking tape shall have a 35 gauge (0.0035") solid aluminum foil, core encapsulated within a 2.55 mil (0.00255") polyethylene backing and a 0.6 mil (0.006") PET cover coating. The laminate on each side shall consist of a 0.75 mil (0.00075") layer of hot LPDE, poly-fusing the "sandwich" without use of adhesives.

2.14 AUTOMATIC CONTROL SYSTEM

An Independent Station Controller: Furnish a solid state controller, as specified on the plans. Each station shall be capable of timing from zero (0) minute to 99 minutes per station in one (1) minute increments.

Each station shall be capable of operating two (2) 7VA electric valve-in-head solenoids.

- The stand-alone controller shall have two (2) possible programs.
- The stand-alone controller shall provide global percentage increase/decrease (water budget) for all stations simultaneously, from ten (10) to two hundred (200) percent, in ten (10) percent increments.
- All stations shall be able to be turned on/off manually buy operating timing mechanism or by manual switch at station output,
- The stand-alone controller shall incorporate an integral MOV surge protection into the terminal block for each of its 24 VAC field wire outputs. Controller power input wires will also incorporate surge protection.
- The control panel shall provide continuous display time. It shall have alphanumeric displays of descriptive English menus and legend identifiers with cursor selection of function and precision value adjustment by rotary dial input
- The stand-alone controller shall be UL listed and FCC approved.
- The stand-alone controller shall have 117 VAC, 60 Hz input, 26.5 VAC, 60 Hz output for operating 24 VAC solenoids.
- The stand-alone controller cabinet shall be a lockable and weather-resistant outdoor cabinet. Mount as noted on plans.
- The controller shall be equipped with lightening protection, by the Contractor, on both the primary (120v) and each secondary (24v) circuit. The controller circuits shall be grounded to a copper clad grounding rod located at each controller.
- The controller shall be equipped for a water conservation device. as specified.

PART III: EXECUTION

3.01 INSPECTION

The Contractor shall examine the areas and conditions under which landscape irrigation system is installed and notify the Landscape Architect in writing of conditions detrimental to the proper and timely completion of the work. The Contractor shall proceed with the work until unsatisfactory conditions have been corrected in a manner acceptable to the Landscape Architect.

3.02 PREPARATION

The Contractor shall provide sleeves to accommodate pipina under walks or paying. The Contractor shall coordinate with other trades and install to accurate levels prior to paving work. Cutting and patching of paving and concrete will not be permitted. The Contractor shall maintain all warning signs, shoring, barricades, flares and red lanterns, as required by any local codes, ordinances or permits.

3.03 TRENCHING AND BACKFILLING

A. Excavation: The Contractor shall stake out the location of each run of pipe, sprinkler heads, sprinkler valves and isolation valves prior to trenching. Excavation shall be open vertical construction sufficiently wide to provide free working space around the work installed and to provide ample space or backfilling and tamping. Trenches for pipe shall be cut to required grade lines, and compacted to provide accurate grade and uniform bearing for the full length of the line. The bottom of the trenches shall be free of rock or other sharp edged objects. Minimum cover shall be as follows:

Pipe and Wire Depth

Pressure Mainline 18" at top of pipe from Finish Grade 12" at top of pipe from Finish Grade Lateral Piping (rotor) Lateral Piping (pop-up) 12" at top of pipe from Finish Grade Control Wiring Side of main Line

- B. Minimum Clearances: All pipelines shall have a minimum clearance of six inches from each other and from lines of other crafts. Parallel lines shall not be installed directly over one another. No lateral line shall be installed in the main-line trench.
- 3.04 INSTALLATION OF PIPING
- A. PVC Pipe and Joints: The Contractor shall not install solvent wild pipe when air temperature is below 400 F. Installation shall be in accordance with the manufacturer's instructions.
- 1. Only the solvent recommended by the pipe manufacturer shall be used. All PVC pipe and fittings shall be installed as outlined and instructed by the pipe manufacturer, and it shall be the Contractor's full responsibility to make arrangements with the pipe manufacturer for any field assistance that may be necessary. The Contractor shall assume full responsibility for the correct installation.

3.05 BACKFILLING PROCEDURES

Initial backfill on PVC lines shall be pulverized native soil, free of foreign matter. Within radius of 4" of the pipe shall be clean soil or sand. Plant locations shall take precedence over sprinkler and pipe locations. The Contractor shall coordinate the location of trees and shrubs with the routing of lines and final head locations.

- A. Backfill and Compaction: The Contractor shall leave trenches slightly mounded to allow for settlement after the backfilling is completed. The Contractor shall clean the site of the work continuously of excess waste materials as the backfilling progresses, and leave in a neat condition. No trenches shall be left open for a period of more than 48 hours. Protect open trenches as required.
 - The Contractor shall carefully backfill excavated materials approved for backfilling, consisting of earth, loam, sand, and other approved materials, free of rock and debris over 1" in size. Backfill shall be compacted to original density of surrounding soil without dips, sunken areas, or
 - The Contractor shall conform to DOT requirements for methods and required compaction percentages, for roads and paving.
 - The Contractor shall hand place the first 6" of backfill (or to top of pipe) and have it walked on so as to secure the position of the pipe and wire.
 - No wheel rolling will be allowed. The Contractor shall remove rock or debris extracted from backfill materials and dispose of offsite. The Contractor shall fill any voids left in backfill with approved backfill materials.
- B. Existing Lawns: Where trenching is required across existing lawns, uniformly cut strips of sod 6" wider than trench. The Contractor shall remove sod in rolls of suitable size for handling and keep moistened until replanted. The Contractor shall replant sod within 48 hours after removal, roll and water generously. The Contractor shall resod any areas not in healthy condition equal to adjoining lawns 10 days after replanting.
- C. Seeded Area: Trenching will be required across existing seeded areas, primarily roadway edging. The Contractor shall conform to the requirements of seeding, Section 02930 for the reseeding of the disturbed trench area.
- D. Pavements: Jack and bore or directional bore piping under paving materials as per local regulatory codes. No cutting and patching of pavement will be permitted.

3.06 VALVES

- A. Isolation Valves: Shall be sized corresponding to adjacent pipe size. Specified valve boxes shall be installed flush with finish grade in such a manner that surface forces applied to their exposed area will not be transmitted to the piping in which the valve is installed nor any other piping, wiring or other lines in the vicinity of said valves.
- B. Gate Valves: Install where shown, in valve boxes
- C. Electric Control Valves: Shall be installed in specified valve boxes. The valve shall have 6" of 3/4" pea gravel installed below the bottom of the valve. If the valve box does not extend to the base of the valve, a valve box extension shall be installed. Electric control valves shall be installed where shown and grouped together where practical. The Contractor shall place no closer than 24" to walk edges, bikeway edges, buildings and walls. The Contractor shall adjust the valve to provide flow rate or rated operating pressure required for each sprinkler circuit.

3.07 CONDUIT AND SLEEVES

A. Conduit and Sleeves for Control Wiring and Main/Lateral Pipe: The Contractor shall provide and install where necessary. Contractor shall coordinate locations of previously installed sleeving with the General Site Contractor.

The Contractor shall coordinate installation of sleeves with work of other disciplines.

3.08 CONTROLS

- A. The Contractor shall connect electric control valves to controllers in a clockwise sequence to correspond with station settings beginning with Stations 1, 2, 3, etc. Automatic controllers shall be provided and installed by the Contractor as noted on the drawings. All zones will be labeled on the controller
- B. Controllers shall be equipped with lightning protection and grounded to a standard 5/8" copper clad steel ground rod driven a minimum of 81 into the ground and clamped.
- C. The electrical service to the controllers shall be performed by an electrical subcontractor in compliance with NEC requirements.

3.09 CONTROL WIRE

- A. Control wiring between the controller and electric valves shall be buried in main line trenches or in separate trenches. Electrical connection at valve will allow for pigtail so solenoid can be removed from valve with sufficient slack to allow ends to be pulled 12" above ground for examination and
- B. An expansion loop shall be provided at every valve at 100' o.c. Expansion loop shall be formed by wrapping wire at least eight times around a 3/4" pipe and withdrawing pipe.
- C. The wire shall be bundled and taped every ten feet. The wire shall be laid in the trench prior to installing the pipe being careful to install wire beneath and 6" to the side of the main pipe line.
- D. Electrical connections to electric control valves shall be made with Rainbird Pen-Tite or Techdel GT-3-GEL - Tite connectors or equal.

Power Connections: Electrical connections to power and signal wires shall be made using 3M 82-A2 power cable splice kits.

3.10 SPRINKLER HEADS

- A. General Provisions:
- 1. Sprinkler heads shall be installed as designated on the shop drawings. Heads shall be installed on flexible PVC. Top to be flush with finish grade or top of curb.
- 2. Spacing of heads shall not exceed the maximum indicated on the shop drawings (unless directed by the Landscape Architect). In no case shall the spacing exceed the maximum recommended by the manufacturer.

B. Head Types:

- 1. Pop-up- Rotary Sprinkler Heads: Shall be installed on flex joint and be set with top of head flush with finish arade. Heads installed at curb shall have 6" to 10" between perimeter of head and concrete. Heads placed at edge of pavement having no curb shall be installed 24" from edge of pavement.
- 2. Spray Pop-up Sprinkler Heads: Shall be installed on flexible PVC and be set with top of head flush with finished grade. Sprinkler heads placed adjacent to curbs will be installed 9" from concrete. Sprinkler heads placed adjacent to pavement having no curb shall be installed 24" from the edge of pavement.

3.11 COMPLETION

A. Flushing: Before sprinkler heads are set, the Contractor shall flush the lines thoroughly to make sure there is no foreign matter in the lines.

The Contractor shall flush the main lines from dead end fittings for a minimum of five minutes under a full head of pressure.

B. Testing: The Contractor shall notify Landscape Architect and Owner forty-eight (48) hours in advance of testina.

Prior to backfilling of main line fittings, Contractor shall fill the main line piping with water, in the presence of the Owner/Landscape Architect, taking care to purge the air from it by operating all the sprinkler control valves one or more times and/or such other means as may be necessary. A small, high pressure pump or other means of maintaining a continuous water supply shall be connected to the main line and set so as to maintain 100 PSI in the main line system for two (2) hours without interruption. When this has been accomplished and while the pressure in the system is still 100 PSI, leakage testing shall be performed in accordance with AWWA Standard C-600. Pressure readings shall be noted and make up water usage shall be recorded. Should the rate of make up water usage indicate significant leakage, the source of such leakage shall be found and corrected and the system then retested until the Owner/Landscape Architect is satisfied that the system is reasonably sound. Lateral line testing shall be conducted during the operating testing of the system by checking visually the ground surface until no leaks in this portion of the system are evident. Leaks shall be repaired or paid for by the Contractor at any time they appear during the warranty period.

C. Adjustment and Coverage of System: Coordinate pressure testing with adjustments and coverage test of system so both may occur at the same time. The Contractor shall balance and adjust the various components of the system so that the overall operation of the system is most efficient. This includes a synchronization of the controllers, adjustments to pressure regulators, pressure relief valves, part circle sprinkler heads, and individual station adjustments on the

3.12 WARRANTY

- A. The Contractor shall fully warrant the landscape irrigation system for a period of one (1) year after the written final acceptance and will receive a written confirmation from the Landscape Architect that the warranty period is in effect.
- B. During the warranty period, the Contractor will enforce all manufacturer's and supplier's warranties as if made by the Contractor himself. Any malfunctions, deficiencies, breaks, damages, disrepair, or other disorder due to materials, workmanship, or installation by the Contractor and his suppliers shall be immediately and properly corrected to the proper order as directed by the Owner and/or Landscape Architect.
- C. Any damages caused by system malfunction shall be the responsibility of the Contractor who shall make full and immediate restoration for said damages

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